ADVERTISING AND SALES PROMOTION

MAJESTIC PUTS OUT TINY SALES MANUAL

CHICAGO—When Majestic retail salesmen open the envelope containing their new refrigerator sales manual, they will find a 72-page booklet so small that it may be carried in a vest pocket.

This complete but tiny book of sales instruction is one of several new sales promotion pieces issued by the Grigsby-Grunow Co. for use in selling its 1933 line of electric refrigerators.

Content of the diminutive sales manual is much the same as that used in the larger Majestic manual last year, but has been re-edited and shortened in several places. New terms and definitions concerning features of the company's 1933 line have been added, however.

New Demonstration Manual

On the inside of the manual's front cover is a pocket for business cards, and at the back is a self-erasing memo pad.

Majestic dealers and salesmen will also be provided with a new demonstration manual, or home presentation book. Its glazed, semi-rigid pages are bound with spiral wire, enabling the salesman to lay the book flat upon a table or chair.

This book contains pictures and key specifications of all models in the new Majestic line, together with an exterior view of each model, photographed with the shadow of persons and objects thrown on the front of the unit.

The shadows are intended to typify a particular feature of the model so photographed, such as sanitation, capacity, convenience, economy, etc.

Illustrate Operations

Illustrations of various operations in manufacturing the Majestic refrigerator, and photographs and explanations of various structural features of the new Majestic are also included in the book.

A photograph of the Capitol dome at Washington superimposed on, and blended with, a picture of the steel casing which houses the new Majestic unit is used in this manual, and will appear with Majestic advertising this year, over the words "Secure as the Nation."

Wall Hanger

For those dealers who do not maintain a display of the complete line at all times, Grigsby-Grunow's sales promotion department has made a available a "wall hanger"—a multi-colored broadside for use on the showroom wall or in the window to illustrate the full refrigerator line.

A new window trim to be used by dealers and distributors comprises a large center panel resembling a large open book, on the pages of which are shown an open Majestic refrigerator, with arrows pointing out major features. Several small cards and a streamer complete the display.

Just issued is a new folder for hand-out or mailing purposes which illustrates and points out features of the entire Majestic refrigerator line. It is printed in color, and folded in semi-accordian fashion.

G. E.'S RADIO REQUEST FOR COURTESY BRINGS RESULTS

ST. LOUIS—The General Electric Co.'s radio request that persons receive a sales representative courteously is bearing fruit in this city, according to a refrigerator salesman in the organization of James & Co., Inc., General Electric refrigerator, range, and dishwasher distributor here.

While he was canvassing in an exclusive residential section one day, a maid who answered the door started to close it when he stated that he represented the General Electric Co. The mistress of the house happened to be in the hallway and heard the salesman.

She called to the maid to wait a minute. Then, receiving the representative, she told him how much she enjoyed the G. E. program, and said that the least she could do was reciprocate the company's courtesy.

TOBIN JOINS PUBLICITY STAFF OF AGENCY

DETROIT—Stanley Tobin, formerly a member of the advertising staff of ELECTRIC REFRIGERATION NEWS and of the public relations staffs of Frigidaire Corp. and the Geyer Co., Dayton, advertising agency, has joined the publicity department of Brooke, Smith & French, Inc., of this city, advertising counsel for Kelvinator Corp. and Leonard Refrigerator Co.

Gale Resigns as G.E. Exhibits Manager

SCHENECTADY, N. Y.—Frank H. Gale, manager of conventions and exhibits of the General Electric Co., has been retired at his request after 43 years of service with the company. L. W. Shugg has been appointed division manager of the publicity department to succeed Mr. Gale in charge of that work.

Mr. Gale will have general charge of arrangements for the General Electric Co.'s participation in the Century of Progress exposition, Chicago, until it is opened to the public in June.

Mr. Shugg entered the employ of the General Electric Co. in 1902 and since 1909 has been in the exhibition work.

ADVERTISING ADDS TO POWER OF DISPLAY

CHICAGO—"You won't find tomorrow's business by studying how you got business last year," said C. C. Younggreen, executive vice president of Reincke-Ellis-Younggreen & Finn, advertising agency, and past president of the International Advertising association, in a recent address before the Engineering Advertisers' association meeting in this city.

"New and changing markets, changing methods of distribution, and revamped sales methods demand new advertising policies," he continued. "I believe there will be an increase in advertising appropriations in 1933 because wise business leaders have found that advertising has been cut to the irreducible minimum."

Mr. Younggreen pointed out that no matter what the state of general business, there must be sales.

The individual must replenish and renew, the store must restock, the processing plant must reequip, and the manufacturing plant must produce.

It is up to the merchandiser to lead the way, Younggreen believes.

Eight Sales Closed By Use of Sales Promotion Plan

POMPTON LAKES, N. J.—William P. Friend, General Electric dealer here for Philip H. Harrison & Co., Newark, recently sold eight Monitor Tops through a sales promotion plan which he devised.

He sent out 80 letters to prospects in the town offering to place a "Monitor Top" in the home for a 30-day trial. Following up the letters, he succeeded in placing nine refrigerators, eight of which he sold.

Through the use of the General Electric Kitchen coach, Friend has succeeded in starting several complete General Electric kitchens. In one day, Friend and E. H. Dryer, wholesale specialist for the distributor, sold a G. E. Hotpoint range and steel cabinets to start one kitchen.

They drafted plans for another interested prospect, and for a third, placed a refrigerator on trial.

To herald the visit of the distributor's kitchen coach to the town, Friend sent a truck of his own up and down the streets, bearing a sign: "See the General Electric Dream Kitchen."

AGENCY EXECUTIVE TALKS ON BUSINESS

NEW YORK CITY—Daily newspaper advertising, if efficiently linked up with a store's window display, will quadruple the selling power of the window, according to a display manager who reported to the League of Advertising Women in New York City on practical tests in which this idea was used.

When new high-style merchandise, the speaker stated, is advertised in the newspaper by the store with which he is connected, an immediate response is obtained.

Similarly, when it is featured exclusively in a window display, there is a good response, the speaker declared.

But when these two mediums are effectively harnessed to do the same job, he states, the response is four times either medium alone.

According to this speaker, when show cards are used in window displays his test has shown that 60 per cent more shoppers stop, and those who stop spend 13 per cent more time looking at the window than they do in looking at a window in which show cards are not used.

WANTED . . .

. . . THE NAME of any manufacturer whose business is in such a Profitable Position that he can possibly afford to do without the tremendous Buying Power of *more than 600,000 homes* in the world's greatest market place . . . or do without the compelling co-operation of New York's *Best Read* Evening Newspaper.

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THE NEWSPAPER OF THE INDUSTRY

ELECTRIC REFRIGERATION NEWS

WRITTEN TO BE READ ON ARRIVAL

Registered U. S. Patent Office

ESTABLISHED 1926. MEMBER AUDIT BUREAU OF CIRCULATIONS. MEMBER ASSOCIATED BUSINESS PAPERS.

VOL. 8, NO. 8, SERIAL NO. 205
ISSUED EVERY WEEK

Copyright, 1933, by Business News Pub. Co.

DETROIT, MICHIGAN, FEBRUARY 22, 1933

Entered as second-class matter Aug. 1, 1927

THREE DOLLARS PER YEAR
TEN CENTS PER COPY

62

GE JOHN CRERAR LIBRARY 24 1933

G. E. BUILDS LOW-PRESSURE ROTARY; JUNIOR MODEL PRICED AT $99.50; NEW SALES PLANS

EFFECT OF AIR CONDITIONING IS TOLD BY DR. HILL

Detroit Engineers Hear Speakers Describe Comfort Cooling

By John T. Schaefer

DETROIT—Dr. E. Vernon Hill's report on physiological effects of air conditioning, a dramatization of Frigidaire air-conditioning salesmanship, and talks on steam ejector and ice comfort cooling engaged the attention of more than one hundred at Monday night's meeting of the Detroit A.S.R.E.

E. L. Barger, president of the section, introduced George Bright, chairman of the meeting, who presented the speakers. First on the program was E. S. Jones, local engineer for Carrier Engineering Corp., followed by B. J. Lucey and E. E. McEwan of Frigidaire Corp., Dr. Hill of Chicago, and A. G. Loeffel of Detroit City Service Co.

Mr. Jones traced the operation of Carrier's steam ejector for comfort cooling work, and described the functions of its various parts. The steam ejector operates on the principle that water will evaporate at a low temperature in a high vacuum, and that a very high vacuum can be produced by a high velocity jet of steam, he explained.

With a saturated steam temperature table, he showed that water boils at a lower temperature as the vapor pres-

(Concluded on Page 24, Column 1)

APPLIANCE MOTOR IS SELF-PROTECTING

EAST PITTSBURGH, Pa.—A new self-protecting motor which, its designers claim, cannot burn out, and yet carries overloads just as long as the motor itself is not in danger, has just been announced by the Westinghouse Electric & Mfg. Co.

A small disc-type thermostat, mounted on the motor frame, opens the circuit when the motor gets too hot and connects it again after the motor has cooled. The motor is designed particularly for refrigerators, oil burners, air conditioners, etc.

Because the thermostat is arranged to gauge the temperature inside the motor, it lets the motor work as long

(Concluded on Page 21, Column 1)

IOWA MAJESTIC DEALERS ATTEND SALES MEETING

DES MOINES, Iowa—Midwest-Timmermann Co., Majestic distributor here, was host to 250 Majestic dealers Feb. 15 at a meeting held in the Hotel Kirkwood for the purpose of introducing the new Majestic refrigeration line, according to Charles R. Klopp, field sales manager, refrigeration division of Grigsby-Grunow Co.

The afternoon was devoted to a business session. George Timmermann, president of the distributorship, opened the meeting with a message of wel-

(Concluded on Page 28, Column 2)

6 DISTRIBUTORS APPOINTED BY GIBSON CORP.

GREENVILLE, Mich.—Six new distributors have been added to the organization of the Gibson Electric Refrigerator Corp., according to E. H. McCarthy and Les E. Taufenbach, division managers.

New distributors are: Kidd-Russ Co., Houston, Tex.; Schoellkopf Co., Dallas, Tex.; Gibson Sales Co., St. Louis; San Diego Electric Co., San Diego, Calif.; Jas. S. Remick Co., Sacramento and San Francisco; Harper-Meggee, Seattle and Portland.

Leonard Markets Line of Water Coolers

DETROIT, Feb. 22.—A complete new line of electric water coolers, designed to serve office and commercial needs was announced today by the Leonard Refrigerator Co. of Detroit, according to R. I. Petrie, general sales manager.

The line consists of eight models, Mr. Petrie explained. Two of them are of the bubbler top pressure type; four are pressure-type coolers, and the remaining two are of the bottle type.

The cooling unit in all the new models is of special Leonard design, featuring sleeve-type direct cooling (no water bath). Condensing units are mounted on rubber and springs to reduce vibration and to bring about the silent operation which is another feature of the new Leonard coolers.

All cold water lines are thoroughly insulated, Mr. Petrie pointed out. In the two bubbler-type models, an auxiliary outlet is provided which may be fitted with a glass filler as an accessory.

Temperature control is effected by means of an adjustable thermostat located in the machine compartment with an extended bulb in direct contact with the cooling unit.

The refrigerated storage compartment which is a feature of three of the models is lined with porcelain. The center bottom slopes to a drain. The compartment is designed to main-

(Concluded on Page 23, Column 2)

Johnson Co. Enter Refrigeration Field

WAUKEGAN, Ill.—Johnson Motor Co., since 1921 manufacturer of outboard motors, has organized a subsidiary, Jomoco, Inc., for the manufacture of household electric refrigerators.

The new company will manufacture its own refrigerating unit, to be used in cabinets obtained from an outside organization, according to L. J. Kellner, director of the company's refrigeration division.

Compressor is of the two-cylinder, reciprocating type, with a direct drive and positive oiling system. A 1/6-hp. General Electric capacitor motor, and a G. E. temperature control will be used in the new unit.

Shelves are of the flat ribbon type, and all hardware is made from chromium-plated brass, says Mr. Kellner. The cabinet's exterior has a lacquer finish. The unit will produce 63 ice cubes in its three trays at a single freezing.

According to the division manager, the refrigerator will be merchandised through distributors and dealers of Johnson outboard motors, under the trade name "Johnson."

The new refrigerator will also be sold to department and furniture stores for sale under private brand names. The company will also sell refrigeration units to cabinet manufacturers wishing to sell complete refrigerators, and to large stores which buy their cabinets from another source.

First shipments of the new refrigerators will be made before the end of February, according to Mr. Kellner.

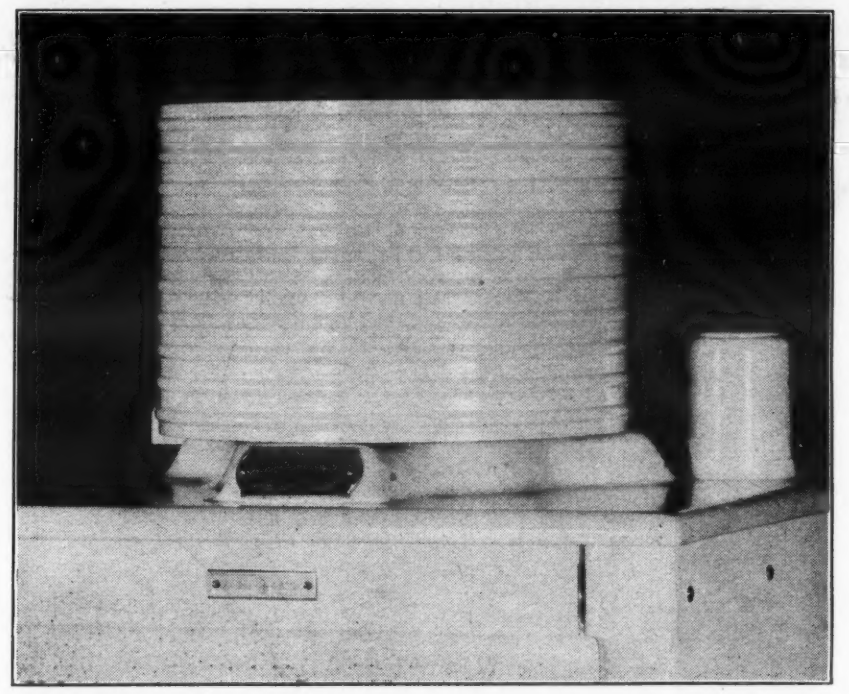
APEX TO DEVELOP SALE OF ELECTRIC MOTORS

CLEVELAND—Plans to develop the sale of motors to manufacturers of household refrigerators and appliances, have just been announced by Claude C. Frantz, sales manager of the motor division, Apex Electrical Mfg. Co. here.

Sales are to be developed on condenser types, split-phase, and small universal and direct current motors, Mr. Frantz states. The motor division of the Apex company has been moved into the new plant, increasing production and engineering facilities.

J. E. Gregory, formerly with the Domestic Electric Co. and Black & Decker Electric Co., has been appointed sales engineer for the Apex motor division, according to Mr. Frantz.

Sheathed in Steel



The Monitor Top on General Electric's new deluxe model is covered with a dustproof steel condenser of unbroken surface.

250 ATTEND SCHOOL ON AIR CONDITIONING

BERKELEY, Calif.—Some 250 West Coast engineers convened here for a two-day session of the Western Conference on Air Conditioning, Feb. 9 and 10.

The committee on general arrangements for the conference consisted of C. A. Reitz, chairman; S. R. Dows, W. M. Moody, A. P. Hahn, H. B. Langille, and Dr. Baldwin M. Woods. Dr. Woods, chairman of the department of mechanical engineering at the University of California, directed the conference, with W. E. Leland, vice chairman.

L. Washington of Stanford university discussed the "Basic Theory of Air Conditioning," illustrating his talk with blackboard demonstrations. He was followed by C. R. Dodson of the

(Concluded on Page 24, Column 5)

N.E.L.A. VOTES TO DISBAND AND DISTRIBUTE ASSETS

NEW YORK CITY—The National Electric Light Association, whose membership numbered some 600 light and power, electrical manufacturing, and utility holding companies, and individuals, was formally dissolved Feb. 15 at a convention of its members here, and a committee appointed to effect a liquidation of its assets, consisting of about $830,000 in cash and securities, within the year.

The committee of five appointed to wind up the affairs of N.E.L.A., after providing for present commitments and committee activities, will distribute the balance of the assets to members in proportion to the contributions made by them from Jan 1, 1926, to Feb. 15, 1933.

On the following day trustees of the new Edison Electric Institute, which

(Concluded on Page 28, Column 3)

Department Store Issue—March 8

How leading department stores in various parts of the country are merchandising electric refrigerators, and other pertinent information on large retail outlets and how they are being fitted into the specialty appliance merchandising picture will be told in the March 8 issue of Electric Refrigeration News.

Official announcement of this issue, of special interest to advertisers, will be found on page 6 of this issue.

Kelvinator Honors 20 Leading Salesmen

DETROIT, Feb. 21.—Twenty stars of Kelvinator Corp.'s national sales organization came here this week to be feted by the factory for winning, in their respective districts, the Burritt Christmas contest.

Business was mixed with pleasure in a two-day program which included banquets, social gatherings, trips through the Detroit and Grand Rapids plants, a visit to Canada, and the awarding of gold watches engraved with the star salesmen's records and names.

George W. Mason, president and chairman of the board of Kelvinator, was host to the visiting salesmen. He was assisted in receiving and entertaining the guests by J. S. Sayre, sales manager; H. G. Perkins, assistant to the president; Vance Woodcox, advertising and sales promotion director; Willard S. French, president, and E. L. Triffit, vice president, of Brooke, Smith & French, Inc., Kelvinator's advertising counsel.

America must look to the salesmen of the country for leadership back to prosperity, Governor Comstock of Michigan told the Kelvinator salesmen in a congratulatory telegram wired to Mr. Mason from the executive mansion in Lansing. The telegram, which was read at the "President Mason Banquet" in the Book-Cadillac hotel, follows:

"Permit me to extend to your 20 salesmen the congratulations and thanks of the State of Michigan for their outstanding sales achievement, which has helped immeasurably to keep the wheels of industry moving and men and women employed in our great state. It is to the salesmen of the country that America must look for leadership back to prosperity.

(Concluded on Page 28, Column 4)

METHYL FORMATE INCLUDED IN A.S.A. CODE

NEW YORK CITY—Revision of the Safety Code for Mechanical Refrigeration to include methyl formate has just been approved by the American Standards Association.

The new refrigerant is added to the list of refrigerants contained in the definition of "flammable refrigerants," and the minimum test pressures on the high and low side are given for methyl formate in Table II, along with test pressures for other refrigerants.

Copies of the revised code are available at 30 cents each from the American Standards Association, 29 West 39th St., New York City.

OFFERS LINE OF OPEN UNITS FOR COMMERCIAL USE

Methyl Formate Used As Refrigerant in Deluxe Model

By George F. Taubeneck

CLEVELAND—In a fever-heat convention which had the dramatic magnitude of a production collaborated upon by Flo Ziegfeld, P. T. Barnum, Morris Gest, and Cecil B. De Mille, the General Electric specialty appliance department introduced last Wednesday and Thursday a brand new deluxe household refrigerator, a restyled "Junior" line with retail prices beginning at $99.50 f.o.b., a series of conventional type commercial compressors ranging from 110-lb. to two-ton capacity (¼ hp. to 3 hp.), and a merchandising program which has been recaulked, retrimmed, repainted, and re-equipped from stem to stern.

More than 400 distributors, their department heads, utility executives, department store representatives, key dealers, and officials of the General Electric Co. attended the sessions, which were held in Masonic Auditorium. Headquarters were maintained in Wade Park Manor.

Standard Line Continued

The standard Monitor Top line (with hermetically sealed reciprocating compressor using sulphur dioxide) will be continued, thus giving General Electric distributors three lines of household refrigerators to sell in 1933, in addition to a full line of commercial compressors and cases, the G. E. all-electric kitchen, and home laundry equipment.

Using methyl formate as the refrigerant, the new "10-star" deluxe General Electric refrigerator has a hermetically sealed rotary compressor encased in a dustproof solid steel condenser of unbroken surface, and operating at low pressures.

This new Monitor Top is set back so that there is room on top of the cabinet for dishes and other articles. At its base is a semi-automatic temperature control with a defrosting switch.

Semi-concealed hardware, a foot-pedal door opener, porcelain-on-steel inside and out, and a stainless steel evaporator with an open freezing chamber accommodating four ice cube trays and nine pounds of ice, are other features of the "10-star" refrigerator.

Adjustable Shelves

Two sliding shelves are adjustable in height by simply turning them upside down, which raises their height three and one-half inches. Placed underneath the glass defrosting tray—which diffuses the light—is a Mazda lamp which is switched on and off by the closing of the door.

Only one model, a 7-cu. ft. box, is being offered with the new low-pressure rotary Monitor Top plus the other features comprising the "10-star" deluxe G. E. refrigerator. It will be priced at $260 f.o.b. Base price of the standard Monitor Top line has been reduced to $155 f.o.b. for the 4.4-cu. ft. model.

Push-Type Door Latch

The 4-cu. ft. "Junior" model will retail for $99.50 f.o.b., the 5-cu. ft. box for $135, and the 7-cu. ft. model for $175. These cabinets are finished in glyptol (Dulux) enamel. Their new exterior design, according to Manager P. B. Zimmerman, was selected by a jury which kept in mind harmony with other kitchen appliances. Door latch on these models is operated by a push.

All G. E. refrigerators will be insulated with Thermocraft, will be powered by General Electric capacitor motors, and will have G. E. controls.

Both the standard and deluxe Monitor Top hermetically sealed refrigerating machines are guaranteed for four

(Continued on Page 4, Column 1)

NEW HOUSEHOLD MODELS OF 22 COMPANIES LISTED IN THIS ISSUE

BY GEORGE F. TAUBENECK - - -

Wottaman No. 3 "Socker" Coe

This is going to be a story about "Socker" (CHARLES FRANCIS) COE, whose thumping new story "Vigilante," is now running serially in the *Saturday Evening Post,* and who is a mighty addition to our select Wottaman Club.

But first let us tell you about FRANCES STEVENS. You'll see why in a moment.

Undoubtedly you've heard Frances' rich, pulse-accelerating voice through your radio — as guest star on Camel and Chesterfield programs, with Red Nichols, Abe Lyman, Henry Thies, Ted Cook, and other bands. And if you saw her in "Three Little Girls," "Nina Rosa," and other Broadway musical shows, undoubtedly you were struck by her brunette beauty — even if your seat was not among the first five rows.

Frances Stevens

But if your optics have never been cocktailed ("Drink to Me Only With Thine Eyes") by a close-up of Frances, you've missed one of the joys of living.

Vibrantly alive and radiant, she is—with the faintly possible exception of Jane Froman and Doris Robbins—the most attractive girl in radio today.

All this is just to show what a helluva man this "Socker" Coe is. When your red-headed correspondent will fail by two hours to keep an appointment with such a Gorgeous Gal as Frances (whom we finally cornered at WTAM, Cleveland, after chasing her from one city to the next) just to hear a man make a speech, that man must have something.

And "Socker" Coe does.

In order to keep the abovementioned appointment we began ooching through the tables at the G. E. banquet in Wade Park Manor when MANAGER P. B. ZIMMERMAN introduced the Speaker of the Evening. If your business requires you to listen to as many Speakers of the Evening as ours does, you'd understand. Maybe you do anyway.

We had just rounded DAN WILLIS'S table and were preparing to step over "BO" BOGART'S leg when a violent oath smote upon our ears. We froze in our tracks, and it flashed in our mind that "Zim" must have introduced BILL GRUNOW by mistake.

There followed a volley of sea-going language which left a previously raucous audience as breathless as a flock of Radcliffe girls proffering autograph books to LESLIE HOWARD. Came then that famous cumulating grin of Coe's, and the audience was his'n.

From that moment on you couldn't have uprooted the writer from his hastily grabbed chair even with certain information that ALBERT EINSTEIN, JOAN CRAWFORD, the PRINCE of WALES, MAHATMA GANDHI, FRANKLIN D. ROOSEVELT, and AL CAPONE had arrived outside in a Model T Ford and wanted to take him for a ride.

Trying to report the Coe "exhortation" (that isn't the word for it—but neither is any other word in our limited circle of philological acquaintances) is like trying to record the sensations of being trampled on by a rioting mob—you wake up hours later to discover that you didn't have a chance to pencil any notes.

Should it have been transcribed mechanically—and I doubt that any recording instrument could have stood up under the volcanic heat of Coe's verbal eruptions — the "speech" wouldn't pass postal censorship.

So, much as we hate to do it, we'll have to leave to your imagination what was probably the most impelling and effective "oration" in the recent history of sales conventions.

Formerly a Navy boxing champion, "Socker" Coe demonstrated that the fundamental principles of the art of pugilism can be translated into the science of declamation. He knocked his audience flat on its back and then —*New Yorker's* Neatest Trick of the Week Dept. please copy—rubbed its nose in the dirt. And the audience *loved* it.

On a platform Coe is an amplified combination of Coach BOB ZUPPKE between halves of the annual Michigan-Illinois football game, BILL GRUNOW at the first luncheon of a distributor's meeting, and JOHN KNAPP.

He looks like Knapp's big brother, has all of Grunow's picturesque and inflammatory vocabulary — with a copious appendix of terms and phrases which would be a liberal education in bombast to Bill—and, with the voltage, stepped up considerably, generates the same type of inspiring and invigorating magnetism with which Zuppke makes RED GRANGES out of small-town icemen.

"Socker" (even his wife calls him that) Coe is Exhibit A in our argument that athletes are the Salt of the Earth. He is so strong and courageous that he can be totally honest. And that's rare.

You feel you know exactly where you stand with him, and where he stands with regard to everything and anything. He can't even lie politely. He may state that he isn't a good after-dinner speaker, but you don't believe it, and you know he doesn't believe it, either.

Parenthetically, it might be recorded that at three different banquets recently we have witnessed speakers—two board chairmen and a president—get into difficulties because, in the middle of an off-color anecdote, they discovered that it wasn't a stag party. All three made the situation worse by hemming and hawing and leaving the story dangling.

But not Coe. Caught in the same trap, he politely asked that the ladies be escorted out of the room. They were, he finished his yarn, and continued his speech without losing a stride.

He is one of the most Positive Personalities this reporter has ever encountered. TED QUINN and REX COLE are his warm friends. We think you'd be too.

In case you are interested, there was a Happy Ending to the Frances Stevens story with which we introduced "Socker."

Fortunately, the two-hour Coe interruption did not prevent the party, which was joined pleasantly by MARGRET ADAMS, PAUL KEAST, and HARLAN DIXON, principals of the touring Ziegfeld's "Show Boat" company. Selah.

* * *

Colossal, Stupendous, 10-Star Production

MIKE MAHONY forgot one thing. A tap dance. Those who attended the General Electric "Big Parade" convention in Cleveland saw a two-day show that had everything else.

We've been interested in showmanship and the stage for a long time, now, and we generally manage to see most of each year's crop of Broadway productions, but never before have we ever witnessed anything like the show Mike Mahony and his conorts put on in Cleveland last week.

We mean that. And anybody else who saw it will agree. Hollywoodenheads would call it "colossal, stupendous." Movie reviewers who award four and five stars to one or two of the outstanding pictures of the year would give 10 stars (with which, by the way, General Electric is designating its new deluxe model) to this show.

Your correspondent attends dozens of conventions a year, and has been doing it for some time now. Most of these conventions have a playlet or two. We thought we had passed the stage of being impressed by dramatic presentations of sales features and plans. But we were wrong.

Practically no speeches marred the production. Every department—product, commercial, apartment house, dealer, central station, department store, advertising and sales promotion, other specialty appliances—the whole works presented their plans and ideas for 1933 in dramatized form. And how they were dramatized!

Eugene O'Neill, with his five-hour "Strange Interlude" which took time out for dinner, and his even longer "Mourning Becomes Electra" (at least, it *seemed* longer) was a piker. The G. E. show began at 9:45 o'clock one morning and finished at 7:45 o'clock the next night—with time-outs for four meals and a trifling amount of shut-eye.

It was like a combination of Barnum & Bailey and Ringling Bros. circus, Ziegfeld's "Follies," Morris Gest's "The Miracle," the Passion Play of Oberammagau, the Olympic games, a Cecil B. De Mille movie extravaganza before the cutting, and a six-day bike race—with the acts and scenes jumbled.

Certainly it must have seemed that way to distraught LARRY HIGGINS, who was producer, director, and stage manager. Problem of scenery changes was enormous, for the settings were elaborate and, in many cases, totally unrelated to the acts which preceded and succeeded each set.

Eye-witnesses declare that Larry, after laboring fiercely for a prac-practically unbroken stretch of 72 hours, broke down and wept tears of relief when the final curtain fell.

* * *

Walter Daily's Big League Talent

Take, for instance, just one portion of the show—WALTER DAILY'S "Anchors Aweigh" which, on a clipper ship set, portrayed the 1933 advertising and sales promotion program.

Imagine putting on a show for distributors with a cast which included BETTE DAVIS, JOAN BLONDELL, WARREN WILLIAM, RICHARD POWELL, ROSA PONSELLE, LILY PONS, TITO SCHIPA, JOHN McCORMACK, GIOVANNI MARTINELLI, LUCRETIA BORI, GRAHAM McNAMEE, BRUCE BARTON, and M. H. AYLESWORTH!

We're not kidding. They were part of the show.

Walter had the resources of the National Broadcasting Co., Warner Bros., Curtis Publishing Co., and Maxon, Inc., to draw upon for talent, and he made full use of his opportunities.

Scarcely had the distributors settled in their seats at Cleveland's Masonic Auditorium before they were shocked out of their hangover drowsiness by the beginning of a special broadcast directly from N. B. C. studios in New York to this G. E. convention.

GRAHAM McNAMEE opened it by talking about the condition of MAYOR CERMAK—who had been plugged by Zangara at Miami Beach on the day previous—thus proving that it was an actual broadcast and not a previously prepared electrical transcription. He transitioned smoothly into the relations between G. E. and N. B. C., and enthused a bit of pep-talk.

Came then greetings to the convention and to personal friends there from M. H. AYLESWORTH, president of N. B. C. and other R-K-O affiliates, and from BRUCE BARTON. Mr. Barton uttered this significant statement:

"DWIGHT MORROW, shortly before he died, declared privately that whenever the cost of copper rises above 18 cents a pound, there are forces which begin to push it down; and whenever it falls below 8 cents a pound, the same forces will begin pushing it up. These forces may work very slowly, but they are inevitable.

"Copper," Mr. Barton observed, "has been quoted at less than 8 cents per pound for some time now; and if the astute Mr. Morrow was right, it should begin rising. As a key commodity, its rise might start a general movement."

* * *

What a Cast!

Over the air then floated the voice of Tito Schipa singing "O Sole Mio," of John McCormack singing "Mother Machree," of Pons, Martinelli, Bori—all Metropolitan Opera artists who are singing on the General Electric radio program.

ROSA PONSELLE was taken off a train at Chicago, rushed to the N. B. C. studio there, said "hello" over the ether to Ted Quinn, and then electrified the distributors by singing "Drink to Me Only with Thine Eyes," and "Carry Me Back to Old Virginny" directly to and for them.

But Walter Daily wasn't through. There were four aces up his sleeve—Bette Davis, Warren William, Joan Blondell, Dick Powell. These Warner Bros. picture stars appeared in a talking picture, "Just Around the Corner," prepared in Hollywood especially for the General Electric Co.

In highly enjoyable fashion it shows how boss Warren William decided that underling Dick Powell deserved promotion—all because he admired Dick's foresight in purchasing an all-electric kitchen, and his wife's (Bette Davis) efficiency in running it. Joan Blondell appears in a bedroom scene. It's a humdinger.

This picture, Manager Zimmerman estimates, will be seen by 20 million prospects for the G. E. Kitchen this year.

We could go on for hours like this telling about the two-day show.

Professional actors appeared in most of the plays and skits. Their work was corking, and the distributors were in an uproar most of the time.

But the money situation in Detroit being what it is just now, we don't feel we'd better add the 16 extra pages it would take to tell the story.

You probably get the idea by this time, anyhow.

* * *

Old Friends

Scads of old friends there, all happy and earnest. Rode over from Detroit with keen J. B. OGDEN, merchandise manager of the huge J. L. Hudson & Co. department store in Detroit . . . Heard ED SCHAEFER of Milwaukee declare in a taxi after it was all over that there wasn't a thing more he could ask for, and Ed is the type who is hard to satisfy—knows what he wants and digs away until he gets it.

Ran into BEN RITTER, southwestern representative, just after he had been held up in a Cleveland shoe store. Ben had been tied to a negro while the robbery took place. If you know Ben, you won't be surprised to hear that he talked the thief into leaving five bucks in Ben's wallet.

Received from BEN ALLEN, southern district representative, an autographed copy of his book of verses, "Retrospection," on the promise we would cease referring to them as "pomes." So be it.

Found TURNER BARGER of Cincinnati tanned (apparently by a G. E. sunlamp) and in the best of spirits. Ranges going good down there.

GEORGE BAUDER, GEORGE BELSEY, L. H. BENNETT, and KELLY COURTRIGHT, the California distributors, ganging together as usual, and on their toes to get the details of the new merchandising plans. West Coast off to a slow start this year.

H. G. BOGART of Toledo, JUDSON BURNS of Philadelphia, and SYD CASWELL of Detroit as amiable as ever. All enjoying better-than-expected business, all looking prosperous.

REX COLE and all his gang—E. H. CAMPBELL, PAUL HICHBORN, R. STEVENSON, JOHN MASSIMI, and the rest of them—serious and business-like, studying the new program hard . . . Missed DICK COOPER of Chicago, who is still recuperating in Florida from the accident he sustained last November.

DAN WILLIS brought a big gang of goodfellows over from Akron, as did FRANK WOLF from Buffalo. Frank drew a big hand at the banquet when his profit for 1932 was announced . . . Glad to see his salesmanager, JOHNNY ECCLESTONE, again.

L. D. JAMES had much to say about the new home of his St. Louis distributorship . . . And E. O. CONE of El Paso divulged in confidence some knockout plans he has for spring exhibitions.

BILL DRISCOLL of Charlotte, N. C., about whom we'll have more next week . . . ART DUNNING of Duluth and PHIL HARRISON of Newark much more quiet and taciturn than is their wont.

C. L. McCREA of Washington, D. C., and "HAP" PENDERGRAPH of Nashville feeling pretty good about the year's work . . . Mr. Pendergraph listened with great glee while TED QUINN gave the writer a lengthy verbal spanking. Ted still upset because we printed the Tricold advertisement last March and the Grunow story last November. Feels better, now that he got it off his chest.

NICK OVALLE of Harrisburg suave and self-assured . . . O. F. STUEFER of Minneapolis with kind words to say about the reporting abilities of our ELSTON HERRON . . . J. E. NEILY of Waterbury, Conn., wondering how we do it—simple, old top, all done with mirrors.

From the home office: JEAN DE JEN, whose talents as an actor and speaker become more evident with each succeeding convention. As a former sports writer, we can't resist the temptation to select Jean as the individual star of the game.

WALTER LANDMESSER, happy as a 30-year-old girl who has at last become engaged, because after all these years he has a complete commercial line to sell.

AL UHALT, whose duties as head of the dealer division haven't stopped him from becoming the foster father of the kitchen coach.

MIKE MAHONY, improvising on the stage during a scene-shifting delay . . . "You walk into a dealer's store, see, put your hat on his desk, see, start talking, see, about the tough time you had coming over those dirt roads, see, from the last town, and first thing you know, see, this dealer, see" . . . and so on until Manager ZIMMERMAN interrupted him in the climax of his story so that the show could go on.

WALTER DAILY, great showman that he is, did a punk job of picking chorus girls—they had legs like the variety one usually sees in a burlesque staged by a male collegiate organization . . . HARRY MEALEY, polished and helpful as ever . . . W. M. TIMMERMAN helpful, too . . . And ART SCAIFE.

Buoyant LOU MAXON, whose advertising agency continues to defy economic laws and conditions by growing. Lou is apparently one helluva smart man . . . His lieutenants, RAY BAKER, HERB SELBY, SID EGAN, GEORGE STRAIGHT, all on the job 24 hours a day keeping the customers happy . . . George helped us out of a little predicament, bless him.

Keen CARL SNYDER, who knows more about selling dishwashers than any man in the world . . . LORIN W. SMITH, JR., whose Sigma Xi key attests to his scientific training and ability, and whose talks stamp him as the greatest authority on kitchen planning in the business. (See page 6 of this issue for his interesting step-saving chart) . . . DR. R. L. MANNING of the G. E. research laboratories, who gave us some tips on night photography.

Lorin W. Smith, Jr.

And so on far into the night. Boy, the paper-stretcher!

* * *

Post Scriptum

P. T. BARNUM once said that to be successful a producer should have either the only show of its kind, or the biggest. General Electric had both.

* * *

P.S. No. 2

Forgot to mention the General Electric specialty appliance department's new sales creed, as propounded by Manager P. B. ZIMMERMAN. Here 'tis:

"We believe that our greatest opportunity is with the retail specialist.

"We believe more than ever before in closed territories.

"Our belief is re-confirmed in morning sales meetings.

"We believe that the salesman receives inspiration for the day by first visiting a user.

"We believe that the morning should be spent in canvassing.

"We believe that the afternoon should be spent in interviewing and following leads and developing new ones through our users.

"We believe that the salesman should make one or more night demonstrations in the home.

"We believe that our best and only story to tell is that of the General Electric Kitchen."

* * *

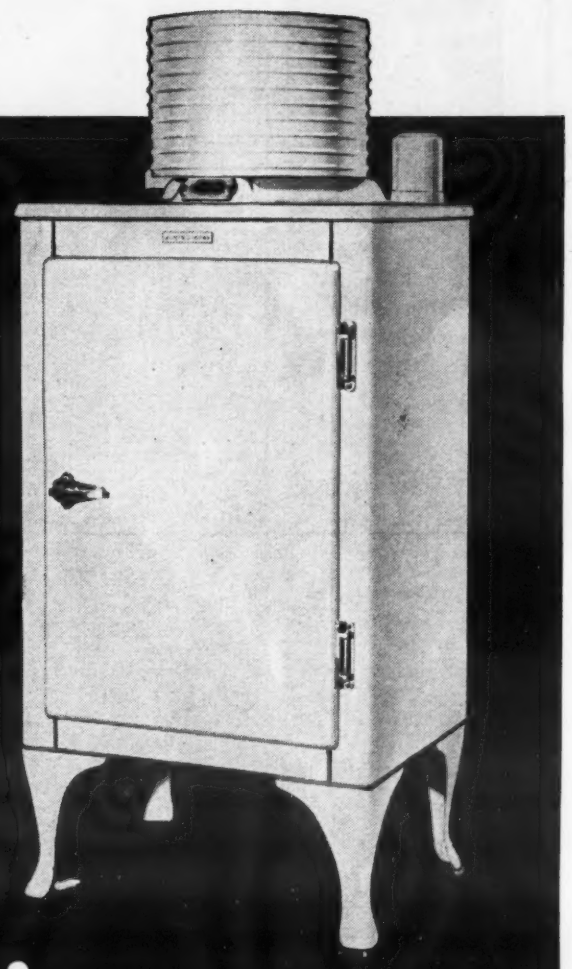
P.S. No. 3

Should you be interested in the phone number of the blonde on page 18, send us your pedigree and we'll consider your case. Applications treated in order received.

In Another Moment: 'Sweet Adeline'

Larry Hawkins of the G. E. "House of Magic"; Charles Francis Coe, popular author; Lou Maxon, president of the advertising agency which bears his name; and Rex Cole, New York City G. E. appliance distributor.

G-E FOR 1933

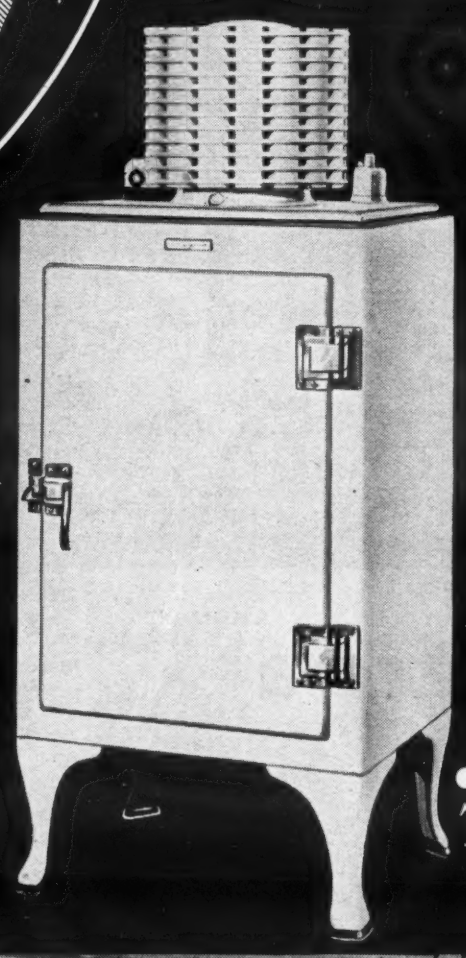


• The Greatest Array of New Features

• • The Greatest Public Preference

• • • The Greatest Range of Prices

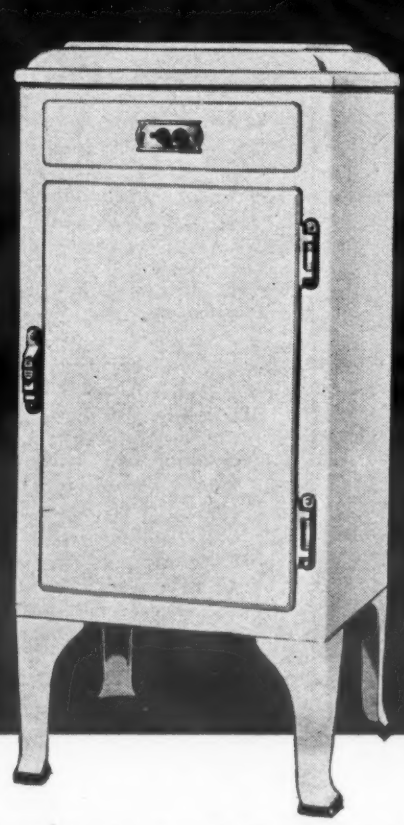
The New 10★ G-E



• • *The Standard Monitor Top*

AS LOW AS

$99.50 AT THE FACTORY



• • • *The New* G-E *Jr.*

AND THE COMPLETE GENERAL ELECTRIC KITCHEN

FOR G-E Retailers, 1933 offers exceptional sales opportunities—new models, a complete range of prices, and G-E's new plan of ensemble selling featuring the famous General Electric Kitchen.

With the new 10* G-E Refrigerator, General Electric again sets new standards of excellence in modern refrigeration. New beauty, new styling and ten *star* features. Its famous sealed-in-steel Monitor Top mechanism carries an unparalleled 4-Year Service Plan.

In addition to the New 10* G-E there is a complete line of Standard Monitor Top models, also carrying the 4-Year Service Plan. And for those prospects to whom original low price is most important, General Electric offers the new G-E Junior of conventional flat-top design, with prices starting at $99.50 (plus tax and delivery). The G-E Junior carries the standard 1-Year Warranty.

Back of the General Electric line is the greatest public preference record ever enjoyed by a refrigerator manufacturer. Today 1 out of 3 refrigerators in use is a G-E Monitor Top. And surveys recently conducted among *prospective* buyers show General Electric has a 3 to 1 preference over any other make.

Not only does the G-E Retailer have the most complete line of electric refrigerators to offer, but when he takes an order for a G-E refrigerator, his profit is *just starting*. With the complete General Electric Kitchen at his disposal, he is assured of *progressive profits* from the same prospect. Eventually the owner of a General Electric Refrigerator will have the entire General Electric Kitchen, including a General Electric Range, General Electric Dishwasher, and other units....and the General Electric Retailer makes a profit on each one. General Electric Company, Specialty Appliance Sales Department, Section DF22, Hanna Building, 1400 Euclid Avenue, Cleveland, Ohio.

GENERAL ELECTRIC
ALL-STEEL REFRIGERATOR

DOMESTIC, APARTMENT HOUSE AND COMMERCIAL REFRIGERATORS, ELECTRIC WATER COOLERS

Commercial
CABINETS BY
Seeger
SAINT PAUL

90,000 Can't Be Wrong

Every Commercial Cabinet by Seeger has built into it the experience of 90,000 predecessors, and each one from this experience is qualified to do the work for which it is intended, in the most efficient and economical way.

When you buy a Commercial Cabinet by Seeger, you get the concentrated knowledge of 90,000 merchants and managers of institutions of what that Cabinet should be.

The large and varied line of Commercial Cabinets by Seeger containing, as it does, a cabinet that will fill the requirements of the average job, is offered at a remarkable reduction from past prices.

For extraordinary requirements, the Seeger "Made to Order" Department should be called on for plans and specifications.

SEEGER REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

232 Fourth Avenue
Fourth Ave. at 19th St.
NEW YORK, N.Y.

655–57 So. LaBrea Ave.
LOS ANGELES, CAL.

666 North Wabash
CHICAGO, ILL.

644 Beacon Street
Kenmore Square
BOSTON, MASS.

General Electric Brings Out Deluxe Model, Restyles 'Junior' Line

(*Continued from Page 1, Column 5*)

years, while the G. E. Junior conventional type machine carries a one-year guarantee. All cabinets are guaranteed for a year.

Included in the new commercial line are the following air-cooled conventional type compressors (prices listed are f.o.b.): ¼ hp., $115; ⅓ hp. $174; ½ hp., $180; ¾ hp., and 1½ hp., $331; and these water-cooled compressors: 1 hp., $323; 1½ hp., $334; 2 hp., $525; and 3 hp., $552. More than 200 different motor and speed combinations can be worked out for these units, according to W. M. Timmerman, G. E. commercial engineer.

In addition the commercial line will include a new group of finned coils, a series of "conditioned air" (forced circulation) chilling units, and all-steel display cases.

Presenting the G. E. refrigeration product array for 1933 at the opening of the convention Wednesday morning, Manager P. B. Zimmerman observed:

"We have gone beyond the class of people who buy because of pride of possession, or because it's something new. We are now reaching into the field of bare acceptance and price-mindedness.

"This year we shall feature our low-priced 'Junior' line in our advertising, contrary to our 1932 practice, and shall expect to obtain a considerable portion of our total volume from sales of these models."

Sound Films Shown

Two sound films, "The Parade of the Conquerors," and "The Parade of Progress," both designed to keep the distributors sold on the substantial and progressive nature of the General Electric Co., took up most of the first morning.

T. K. Quinn, vice president of the General Electric Co., talked briefly before luncheon Wednesday noon on the state of the industry.

"There will be an upward trend in the spring," Mr. Quinn predicted. "The forces of repair and reconstruction are quietly at work now."

The remainder of the two-day program consisted almost entirely of a series of playlets dramatizing the merchandising plans developed for 1933 by the specialty appliance department.

Sessions lasted until 6:45 o'clock Wednesday, and until 7:20 Thursday, and lasted almost continuously from their early morning beginnings until the last curtain dropped.

Central Station Program

In "More Power To You," a professional cast of actors showed how the G. E. proposition should be presented to central station executives. "A Matter of Revenue" did the same for apartment house owners; "A Store Within a Store" did likewise for department stores; and "It's a Set-up!" followed the same formula for dealers.

At the banquet in Wade Park Manor Wednesday night, the new president and cabinet of Refrigerania (mythical G. E. political state in which offices are obtained by sales competition on a quota basis) were installed, and Charles Francis Coe, popular author, delivered a rousing pep-talk (see page 2 of this issue).

All Thursday morning was devoted to Walter Daily's presentation of the advertising and sales promotion program (see page 2 for description of his spectacular production, "Anchors Aweigh." Advertising themes for 1933 will include: "1 out of 3 is a General Electric," "Unparalleled 4-Year Service Plan," "$99.50," "10-Star Features," and "3 to 1 Preference."

'How to Sell'

In the afternoon Art Scaife told how to sell the refrigerator, Jack Poteat talked on range selling, Carl Snyder made a convincing presentation of "negative selling" methods for the dishwasher, and Lorin Smith, Jr., talked on the all-electric kitchen. Mr. Smith also presented a playlet, "Step by Step," showing how an all-electric kitchen could be sold piece-by-piece to a small-income family.

Merchandising Manager M. F. Mahony held a meeting on the stage of his consultants and field representatives, T. B. Allen, R. C. Cameron, Jean DeJen, P. H. Dow, R. H. Ferguson, A. E. Freshman, M. D. Grow, Fred Harvey, Ben Ritter, G. H. Ruck, and Art Scaife, at which the story of the new merchandising plans was told.

A talking slidefilm designed to sell salesmen on the idea of enrolling for the La Salle course for all-electric kitchen salesmen was shown.

Under the direction of Jean DeJen, contest manager, the new "Man Hunt" contest was presented dramatically in a cops-and-squad-car thriller.

While the scenes were being shifted for the commercial division production, Al Uhalt talked about the success various distributors and department stores are experiencing with the use of the G. E. Kitchen Coach. For this coach, he said, a 10-kw. generator has been developed so that the coach may be sent to rural districts where transformer facilities may be poor.

Although designed for small town use, the coach has "taken on" fast in cities, he declared.

A "canned sales talk"—recording of a complete kitchen sales story—for the coach has been prepared by the Metropolitan Motion Picture Co., and was run off by Mr. Uhalt. This record, he pointed out, won't be interrupted as easily as visitors to the coach might break up the talk of a demonstrator.

Walter Landmesser concluded the convention by showing the new commercial line—after putting the distributors in an uproar of hilarity by offering a series of short skits showing how G. E. commercial salesmen had been handicapped in previous years by lack of a complete line—with a novel parade of chorus girls, wooden horses, a band, and whatnot.

Significant news and methods brought out in these dramatic productions included the "kitchen specialist" idea for G. E. salesmen, the new all-electric kitchen story, a new merchandising plan for dealers, preview of the 1933 promotional material, and details of the "Man Hunt" contest. This information is digested below:

Spring Sales Contest

Every General Electric distributor, dealer, and salesman in the United States will become a "man hunter" when he sets out to sell refrigerators, ranges, and dishwashers in the "Man Hunt"—General Electric Co.'s spring sales campaign which opens April 3 for a period of 53 working days.

The drive will follow the theme of a police war against law violators, with every member of the G. E. sales organization, bearing the title of some law enforcement agent, waging war against sales resistance.

Quotas for the two-month campaign will be assigned in dollars to distributors, dealers, utility companies, and salesmen; and winners will be determined on the basis of quota realization.

Breakdown Quotas

Distributors will break down the quota assigned their organizations among their retail outlets and their own retail departments. The retail outlets will in turn break down their quotas among their retail salesmen.

To increase competition among distributors, the country has been divided into seven sales districts, with all distributors in each district competing against each other. There will be, therefore, no national leader, but seven district leaders at the close of the drive.

The "Man Hunt" has been so planned that it may be readily adapted to local competitions in various distributorships and dealerships.

General Electric Co. will award 100 trips to the Chicago World's Fair, the trips to be divided among the distributors according to their quotas.

The distributors will re-divide the trips among their retail outlets, the condition being that for every free trip given by company headquarters, another free trip must be awarded by the distributor, utility, or large dealer participating in the award.

Dates for the salesmen's free trips to the Century of Progress have been set for June 22 and 23.

All Employes to Help

Aid from all G. E. employes (not salesmen) will be enlisted during the campaign. Given the title of special deputy, each employe will be asked to submit names of prospects, and for each bona-fide prospect reported, the employe will receive 100 points toward some merchandise award.

In addition to the World's Fair trips to be awarded to highest-ranking salesmen, every salesman will receive cash prizes for his sales. The prizes will average approximately 2 per cent of the value of his sales at f.o.b. prices. Distributors and their retail outlets will each bear half the cost of these cash prizes.

A feature of the spring sales drive will be a General Electric "national demonstration week," during which all distributors, dealers, and utility companies handling G. E. appliances will have special G. E. displays, demonstrations, and attractions.

Special badges will be given to each person participating in the sales campaign, each badge signifying the "police rank" of the bearer. When sales performance warrants it, badges of higher rank will be awarded.

During the nine weeks of the drive, a full-sized weekly newspaper, "The Police Reporter," will be issued from Cleveland headquarters, telling of progress made during the week past, and of the drive's highlights.

By way of preparing for the spring sales campaign, General Electric Co. is now conducting a "Get A Man Drive" among retail sales managers of its distributorships.

Each retail sales manager has been given a quota of retail salesmen which Cleveland officials estimate is the proper number for the distributorship's 1933 retail operations.

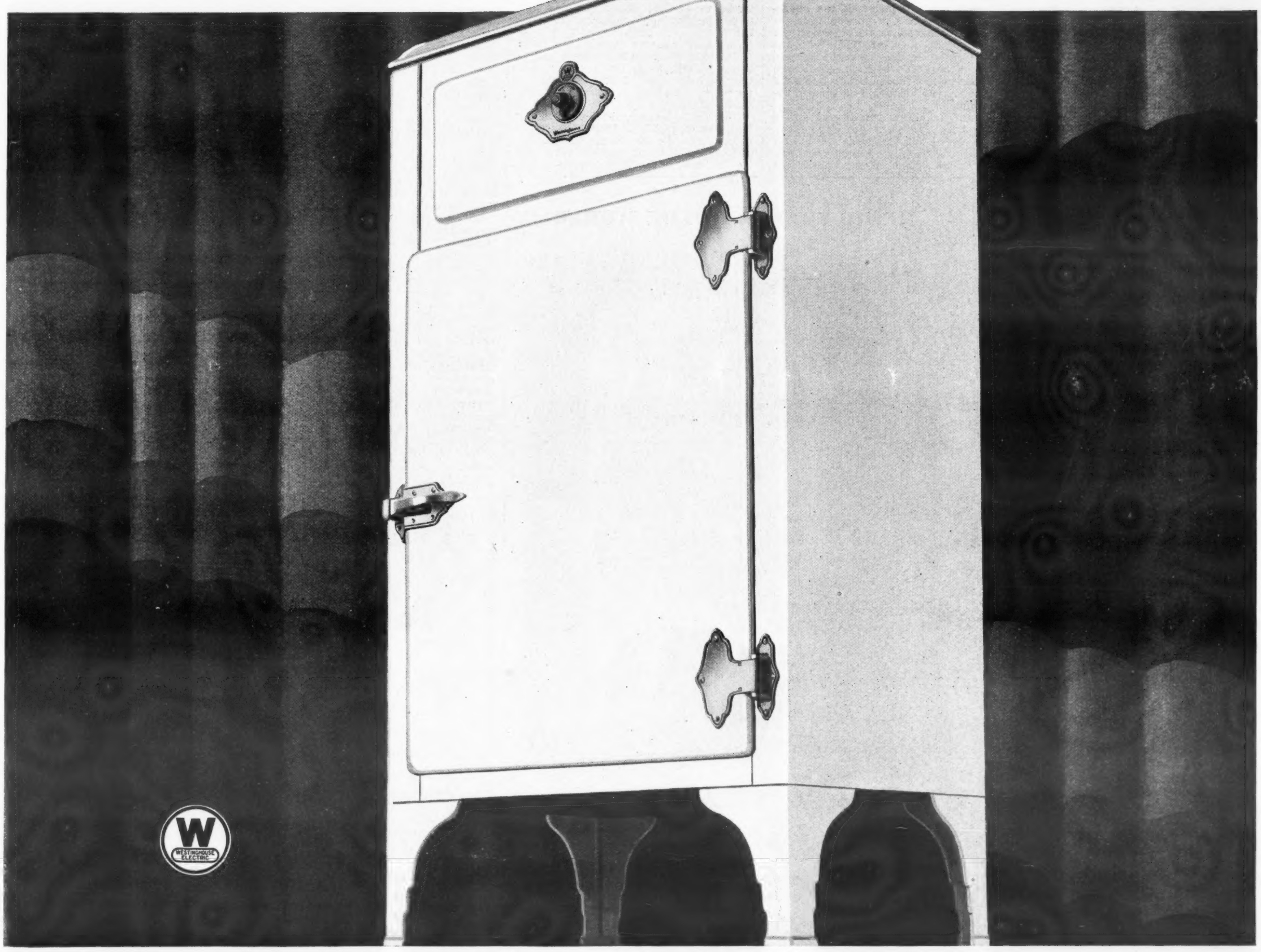
All retail sales managers who have secured their quota of salesmen by

(*Continued on Page 6, Column 1*)

Westinghouse

Dual-automatic

REFRIGERATORS

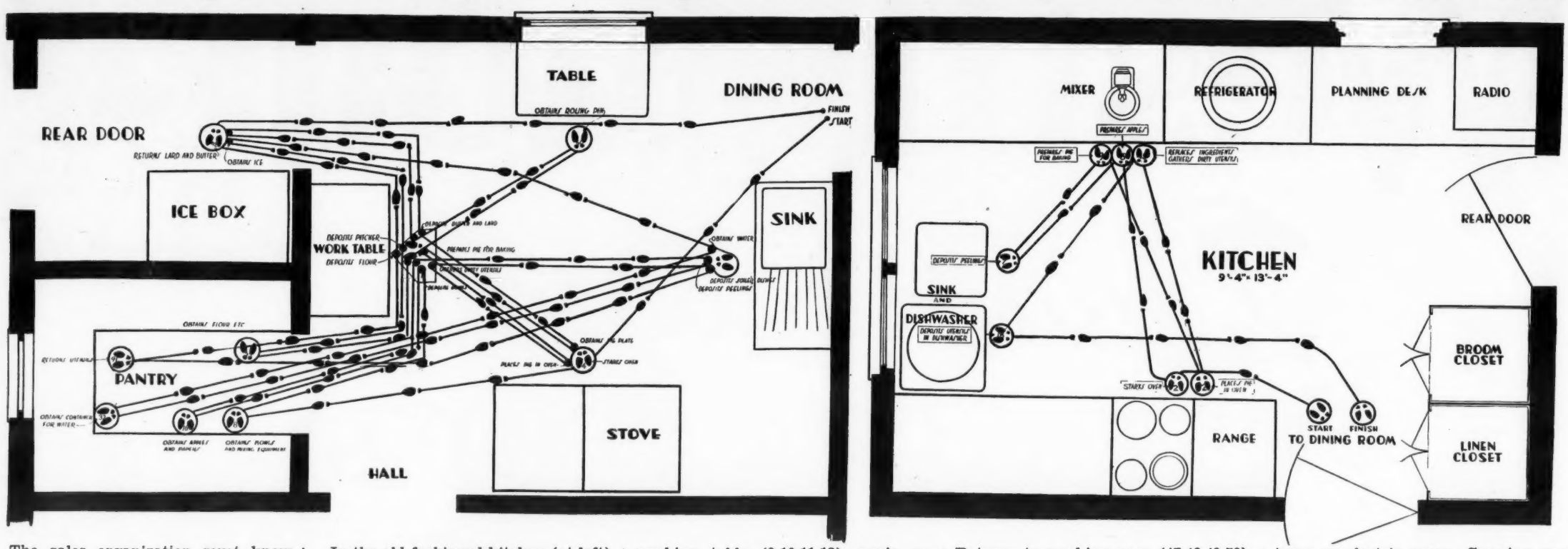


ONE LINE • ONE QUALITY

Constant improvement has kept, and will continue to keep, the Westinghouse Dual-automatic Refrigerator *always new, always advanced in design!* In this one *complete* line of quality refrigerators is combined *every* important modern refinement. Perfected *Hermetically-sealed* Mechanism . . . exclusive *Dual-automatic* control . . . rugged all-steel construction . . . style, beauty, convenience . . . the combination of these advanced Westinghouse features continues to set the pace for the most improved refrigerator. Add to this, the *lower prices,* the *greater discounts,* the financing arrangements, the complete line of models in *all* popular sizes, the expanded merchandising and advertising plans recently announced . . . Westinghouse Dealers have everything it takes to make substantial profit increases in 1933.

WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, MANSFIELD, OHIO.

G. E. Compares the Steps Taken by the Housewife in Old and Modern Kitchens



The sales organization must know and be able to tell a prospect what a product can do for her in the way of saving time, money and labor, Lorin W. Smith, director of the General Electric Kitchen Institute, told General Electric distributors assembled at their recent convention in Cleveland.

Mr. Smith demonstrated his point by showing, with the aid of the charts pictured above, how General Electric equipment, placed in a planned all-electric kitchen, will save the housewife time and labor in the baking of an apple pie.

In the old fashioned kitchen (at left) 121 steps were required of the housewife in the baking of an apple pie. In the modern arrangement shown at the right, but 21 steps are required. Mr. Smith demonstrated how the woman saved 99 steps in a modernized kitchen by tracing her movements as follows, first in the old kitchen, and then in the new one.

Housewife enters starting at dining room door, goes to stove (1-2-3-4), lights oven and proceeds to pantry (5-6-7-8), where she obtains bowls and other mixing equipment, returns to working table (9-10-11-12), again returns to pantry, obtains apples and paper for the apple peelings (13-14-15-16).

She then returns to working table (17-18-19-20), removes paring knife from drawer, peels the apples, takes the peelings and deposits them in garbage container beneath the sink (21-22-23-24).

Goes to the pantry, obtains container for water (25-26-27-28-29-30-31-32-33), returns to sink for water (33-34-35-36-37-38-39). Takes pitcher of water for ice in ice box (40-41-42-43-44-45-46). Returns to working area (47-48-49-50).

Enters pantry again for flour, salt, and cinnamon (51-52-53). Again returns to working table (54-55-56) with spices. Obtains rolling pin from other table (57-58-59), returns to working table (60-61-62).

She then obtains butter and lard from ice box (63-64-65-66), returning to work table with ingredients (67-68-69-70-71).

Housewife then rolls out with rolling pin the pie crust and obtains pie plate from compartment in stove (82-83-84-85). After laying lower crust in pie plate she places apples, cinnamon, butter, and other ingredients in pie, then covers it over with top crust.

Goes to the stove (86-87-88), and places pie in oven which has reached desired temperature by this time. Returning to working area (89-90-91), she picks up soiled dishes and utensils (92-93-94-95-96), and washes them in sink.

Returns mixing bowls and utensils to the pantry (97-98-99-100-101-102-103-104-105), also returning the paring knife at the work table (106-107-108-108-110), and deposits butter and lard in ice box (111-112-113-114).

She then retraces her steps to the door into the dining room (115-116-117-118-119-120-121).

The second pie was made in the General Electric kitchen in the Kitchen Institute at Chicago. Here's what the homemaker did to make this apple pie.

Starting from dining room door the homemaker enters the kitchen and (2) turns on electric range. Crossing over (3-4-5), to the preparing surface adjacent to the refrigerator she first obtains apples from the lower base cabinet and the paring knife from the drawer immediately in front of her, at the same time getting the paper for apple peelings from the supply cabinet.

Peels the apples and then goes to garbage cans (6-7) deposits the peelings therein returning (8-9), to the preparation surface. Reaching to the right she obtains from the refrigerator the ice cold water, lard, butter, etc., which she puts into mixing bowls which are obtained immediately to her left in the supply cabinet.

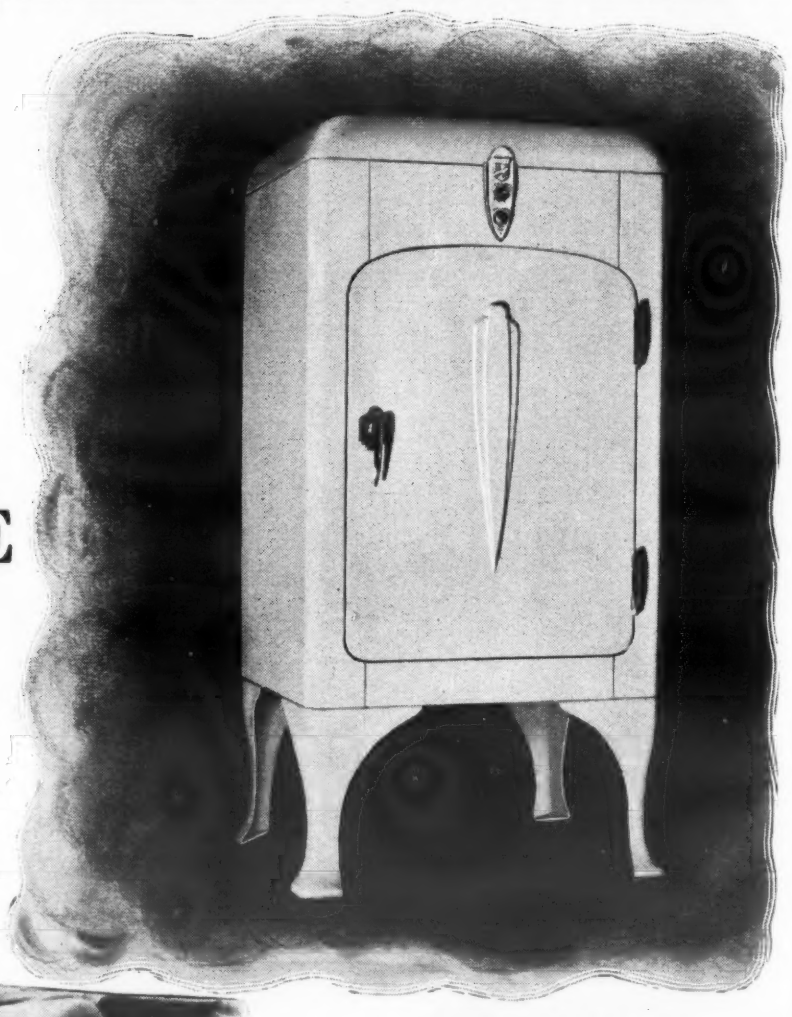
In the cabinet immediately in front of her she obtains the salt, sugar, and flour. The rolling pin is obtained from the supply cabinet immediately to her left.

She rolls out and prepares thoroughly the apple pie on the preparation work surface. The pie plate is obtained from the cabinet below. The lower crust is put into the plate, the apples and ingredients are placed thereon being covered with the top crust.

Housewife then walks across to the G. E. range (10-11-12), which by this time has reached the proper heat for the pie baking. The homemaker then returns (13-14-15) to the preparation work surface gathering up the soiled utensils depositing them (16-17-18) in the dishwasher, and returns to the dining room (19-20-21-22) to complete her other household work while the apple pie is baking.

THE MOST Beautiful REFRIGERATOR IN THE WORLD

The CHOICE of WOMEN EVERYWHERE



NEW SERIES L

Stream line design, flush fitting, curve-top door, embossed door panel and semi-concealed hardware.

STANDARD SERIES H

Larger and finer than ever. The last word in home refrigeration.

$112.00 TAX PAID F.O.B. FACTORY

Model Illustrated

Why not stock the line that women prefer? Gibson offers everything a women desires in beauty, performance and convenience.

Write for Complete Details

GIBSON ELECTRIC REFRIGERATOR CORP.
GREENVILLE - MICHIGAN

GIBSON

An Opportunity to Talk To Department Stores

THE March 8 issue of ELECTRIC REFRIGERATION NEWS will be the Department Store Number. For this issue the editors are gathering information on refrigeration selling and advertising practices of the department stores throughout the country.

Department stores are becoming an increasingly important factor in the distribution of household electric refrigerators, and manufacturers plan to cultivate this field most actively.

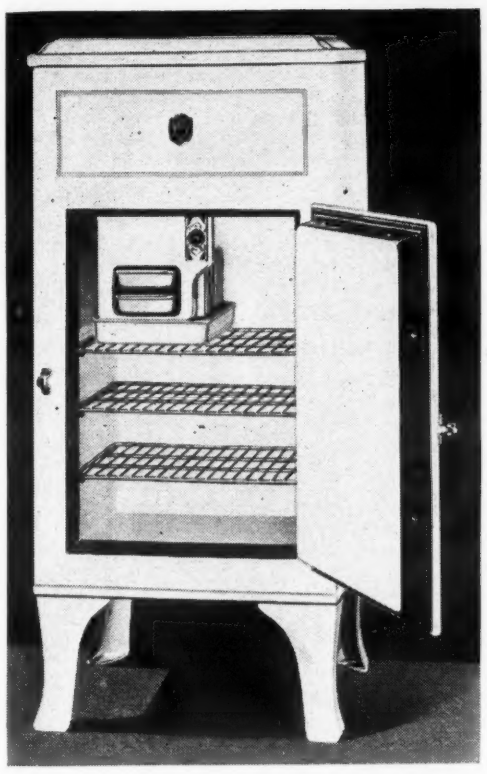
The March 8 issue, in addition to its regular distribution, will be sent to the merchandise managers and other executives of all the worth while department stores in the United States.

This is an *unusual* opportunity for you to get your selling story to the refrigeration industry and the department stores in particular. This special editorial background will give your advertising an added reader interest.

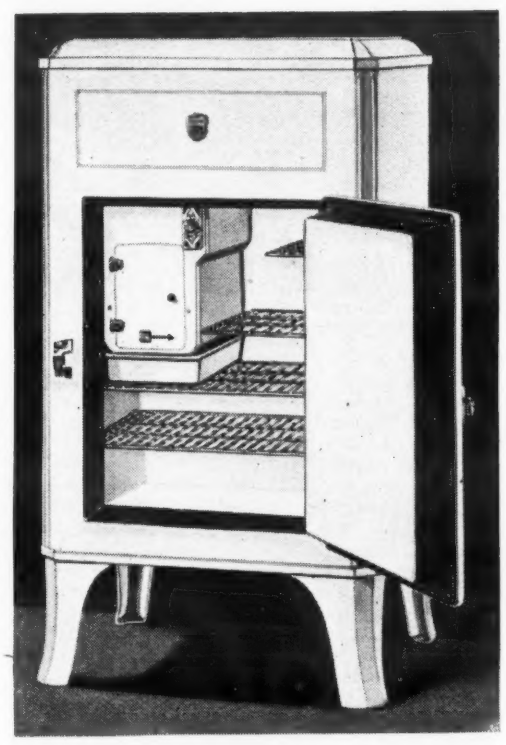
Advertising forms close March 4.

ELECTRIC REFRIGERATION NEWS
550 Maccabees Bldg. Detroit, Mich.

Let's look at the FACTS



DE LUXE MODEL 500 (Electro-Sealed) — Food storage area, 9.68 sq. ft. Exterior dimensions: Height, 54¾ in.; width, 24⅛ in.; depth, 20⅝ in.; depth overall, 25 11/16 in. Two ice trays — 42 ice cubes—4 pounds of ice per freezing. "Isolator wall" cabinet construction. "Stay-Kold" Defroster. Chromium plated hardware. Cabinet finish: Exterior, Elasto; interior, Acid-resisting Porcelain, with rounded corners.



DE LUXE MODEL 700 (Electro-Sealed) — Food storage area, 13.05 sq. ft. Exterior dimensions: Height, 55⅝ in.; width, 30⅜ in.; depth, 23 7/16 in.; depth overall, 27 11/16 in. Four ice trays — 84 ice cubes—8 pounds of ice. Fast freeze tray. "Stay-Kold" Defroster. "Isolator wall" cabinet construction. Chromium plated hardware. Cabinet exterior, Elasto; interior, Acid-resisting Porcelain, rounded corners.

As the purchasing agent for a group of critical housewives, Mr. Dealer, yours is a *tremendous* responsibility. You *must* know your refrigerators, for instance. But remember this. Of all the makes and models you will see advertised in this publication, or elsewhere

Only one has an Electro-Sealed Refrigerating Unit, and it's a

Majestic

With Majestics on your floor you can sell a refrigerator that will *give* service, and not *require* service. That's basic! Every woman wants just that! You can't dispute it.

And here's another thing. You will read, and be told, a lot about the maintenance of cold, dependability, and what not, but of all refrigerators you see and hear about

Only one has an Isolator-Wall Construction that isolates interior cold from exterior heat and it's a

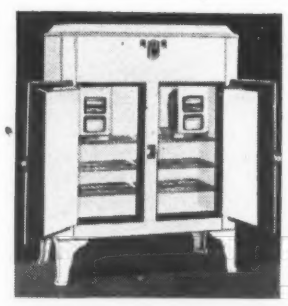
Majestic

Proved refrigeration! Isolated cold! The two essentials in *any* refrigerator and both combined in Majestic, along with a score of other features, and all at a delivered price most tempting to any prospective purchaser.

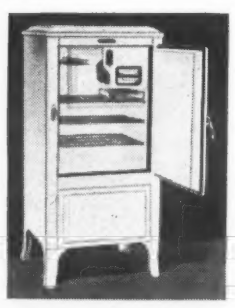
Majestic dealer meetings are being held throughout the country. See these new models. Size them up carefully. Ask yourself this question: If I expect to *sell* the refrigerators I *buy* wouldn't I be smart to buy what I can sell the easiest? Unquestionably you're right!

GRIGSBY-GRUNOW COMPANY, CHICAGO, and affiliates, with factories at Chicago; Toronto; Bridgeport; Oakland; London, England; and Sao Paulo, Brazil

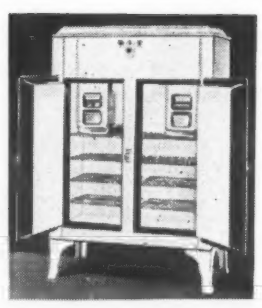
Manufacturers also of MAJESTIC RADIOS



DE LUXE MODEL 1200 (Electro-Sealed)—Food storage area, 18.8 sq. ft. Exterior dimensions: Height, 60 in.; width, 44½ in.; depth, 23¼ in.; depth overall, 27⅜ in. Six ice trays—170 ice cubes—15 pounds of ice per freezing.

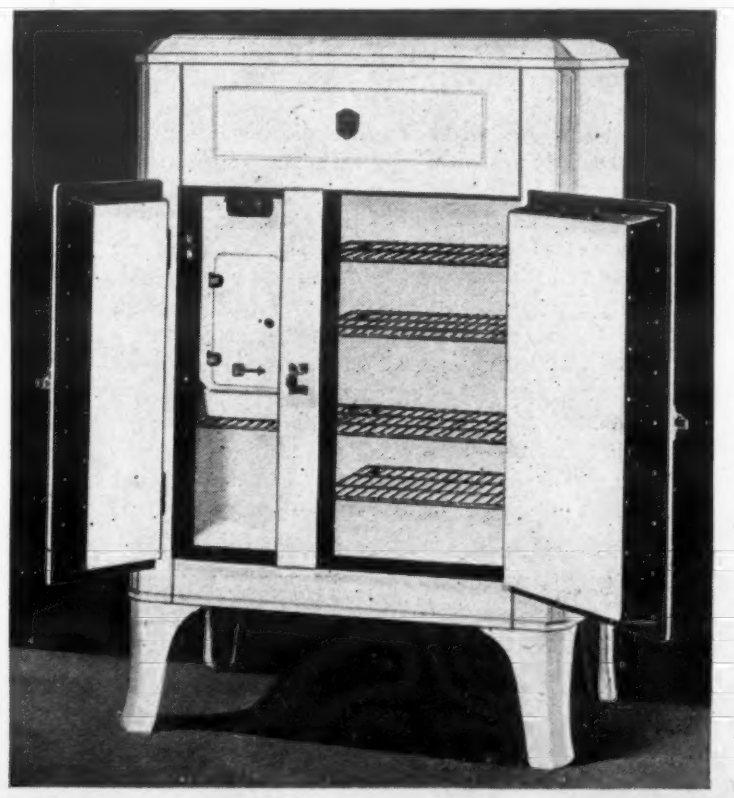


CENTURY MODEL NO. 450—Food storage area, 10.7 sq. ft. Exterior dimensions: Height, 52 15/16 in.; width, 24 3/16 in.; depth, 21⅝ in.; depth overall, 23¾ in. Two ice trays—42 ice cubes—3¾ pounds of ice per freezing.



DE LUXE MODEL NO. 1400 (Electro-Sealed) — Food storage area, 23.25 sq. ft. Exterior dimensions: Height, 66 in.; width, 44½ in.; depth, 23¼ in.; depth overall, 27⅜ in. Six ice trays — 170 ice cubes — 15 pounds of ice per freezing.

DE LUXE MODEL NO. 900 (Electro-Sealed)—Food storage area, 16.4 sq. ft. Exterior dimensions: Height, 58¾ in.; width, 38¾ in.; depth, 23 7/16 in.; depth overall, 27 9/16 in. Five ice trays—105 ice cubes—10 pounds of ice. Fast freeze tray. "Stay-Kold" Defroster. "Isolator wall" cabinet construction. Chromium plated hardware. Cabinet exterior, Elasto; interior, Acid-resisting Porcelain, rounded corners.



Majestic

ELECTRO-SEALED

REFRIGERATION

G. E. OFFERS TRIPS TO CHICAGO EXHIBIT

(*Continued from Page 4, Column 5*)

April 1, when the "Get A Man Drive" ends, will be awarded a silver vacuum water bottle, two silver goblets, and a silver tray.

Starting March 1, all retail salesmen will be given a course in selling G. E. refrigerators, ranges, and dishwashers. These sales training courses will be given over the course of one month, and will end two days before the opening of the spring sales campaign.

Since Jan. 23, General Electric distributors have been conducting a drive for new dealers, and will continue the campaign until March 18. Distributors are attempting to set up one dealership for every 4,000 people in their territories.

Following are the names of distributors and the territories in which they will compete during the campaign:

Atlantic Police District: Clark Adams, Clark Adams, Inc., Atlantic City; W. D. Alexander, W. D. Alexander, Inc., Atlanta; Judson C. Burns, Judson C. Burns, Inc., Philadelphia; L. W. Driscoll, L. W. Driscoll, Inc., Charlotte, N. C.; D. F. Hines, Hines Co., Baltimore; C. L. McCrea, National Electric Supply Co., Washington, D. C.; N. K. Ovalle, N. K. Ovalle, Inc., Harrisburg, Pa.; R. S. Montgomery, R. S. Montgomery, Inc., Richmond; George Patterson, George Patterson, Inc., St. Petersburg, Fla.; and W. M. Perry, Perry-Browne, Inc., Columbia, S. C.

Metropolitan Police District: D. E. Breckenridge, Breckenridge, Inc., Springfield, Mass.; Rex Cole, Rex Cole, Inc., New York City; E. P. Cook, E. Pulver Cook, Providence, R. I.; Charles Gould, Gould-Farmer Co., Syracuse, N. Y.; Philip H. Harrison, P. H. Harrison & Co., Newark; W. H. Kaiser, G. E. Supply Corp., Boston; A. Wayne Merriam, A. Wayne Merriam, Inc., Schenectady, N. Y.; J. E. Neily, Modern Home Utilities, Inc., Waterbury, Conn.; W. L. Thompson, Gentsch, Thompson, Inc., Boston; Frank W. Wolf, Frank W. Wolf, Inc., Buffalo.

Central Police District: Turner Barger, Bard-Barger, Inc., Columbus, Ohio; H. G. Bogart, Jr., H. G. Bogart Co., Toledo; M. E. Brown, A. H. Thompson-Sterling Co., Louisville; S. C. Caswell, Caswell, Inc., Detroit; F. H. Cushman, Cushman-Willis Co., Cleveland; A. F. Head, Hoosier Electric Refrigerator Co., Indianapolis; W. N. Hogan, W. N. Hogan, Inc., Wheeling; W. H. Ochiltree, Ochiltree Electric Co., Pittsburgh; S. E. Stewart, Electric Home Appliance Co., Charleston, W. Va.

Midwestern Police District: R. Cooper Jr., R. Cooper Jr., Inc., Chicago; A. S. Dunning, G. E. Supply Corp., St. Paul, Minn.; M. A. Dunning, A. S. Dunning, Inc., Duluth, Minn.; M. A. Glueck, Glueck & Co., Kansas City, Mo.; L. D. James, James & Co., St. Louis; E. H. Schaefer, E. H. Schaefer Corp., Milwaukee; P. H. Sawyer, G. E. Supply Corp., Des Moines, Iowa; O. F. Stuefer, O. F. Stuefer, Inc., Minneapolis.

Southwestern Police District: Albert Ahrens, Albert Ahrens Co., Oklahoma City; E. B. Edmundson, Edmundson Refrigerator Co., Houston, Tex.; S. C. Griswold, S. C. Griswold, Inc., Dallas, Tex.; D. A. O'Bannon, O'Bannon Bros., Little Rock, Ark.; H. A. Pendergraph, Pendergraph-Brown, Inc., Nashville, Tenn.; Gordon Smith, Alabama Refrigerator Co., Birmingham, Ala.; T. J. Sullivan, General Appliance, Inc., New Orleans; Mark Wright, Wright Bros. Refrigeration Co., San Antonio, Tex.

Rocky Mountain Police District: J. E. Blomquist, G. E. Supply Corp., Salt Lake City, Utah; E. O. Cone, E. O. Cone Co., El Paso, Tex.; A. J. Finck, Storz Electric Refrigerator Co., Omaha; W. E. Graham, G. E. Supply Corp., Butte, Mont.; M. B. Mendenhall, Crescent Electrical Supply Co., Davenport, Iowa; B. K. Sweeney, B. K. Sweeney, Inc., Denver.

Pacific Coast Police District: George T. Bauder, George T. Bauder, San Diego, Calif.; George Belsey, George Belsey Co., Los Angeles; L. H. Bennett, L. H. Bennett Co., Ltd., San Francisco; H. H. Courtright, Valley Electrical Supply Co., Fresno, Calif.; C. W. Hartenfels, G. E. Supply Corp., Portland, Ore.

Kitchen Specialist Plan

General Electric refrigerator salesmen will henceforth be known as "kitchen specialists" and will be given the sales responsibility for complete General Electric kitchens in their territories under the new General Electric retail selling plan.

"Average families today spend more than 30 per cent of their incomes for food and housewives spend an average of four hours a day in the kitchen, or about 25 per cent of their waking hours," Lorin W. Smith, director of the G. E. Kitchen Institute, pointed out.

"The problem of food, procuring it, preserving it and preparing it, is the most important problem in the world today. The natural concern of every housewife in this matter assures the General Electric kitchen specialist an opportunity to demonstrate how his plan of dealing with the food problem will benefit the family.

Canvassing Made Easier

"The new 1933 retail selling plan will overcome the housewife's resistance to the canvassing salesman because it provides for building an intimate contact with the housewife that will insure identification and welcome for the General Electric kitchen specialist."

The problem that confronts the kitchen specialist may be stated simply as a means of finding prospects, and then selling them. The cold canvass will form the basis of all prospect-getting activities, supplemented by the junior salesman plan, users, store traffic, the G. E. sales coach, and advertising and promotion.

The objective of selling 4 out of every 10 good prospects will be attacked by 4,000 kitchen specialists, each operating in a protected territory and using the exclusive G. E. kitchen approach and the step-by-step sales plan.

Organization of sales districts will be the first step in the sales plan. Each sales district will be divided into territories averaging 4,000 domestic meters. Each territory will be subdivided into zones of a size to permit complete coverage every month.

Junior Salesman Plan

A junior salesman will be assigned to each zone and the complete territory will be given to a kitchen specialist who will supervise the operations of the junior salesmen.

It is recommended that the junior salesmen be youths of high school age or slightly older, who reside in the territory that they will canvass.

These junior salesmen will be equipped with a kit of small every day electrical necessities, such as lamps and fuses, and they will also carry a small household appliance such as a toaster or small fan. The small appliance will be offered as a "special," at a discounted price.

Explains Plan

The junior salesmen will explain, on his first call, that the General Electric Co. has adopted this means of door-to-door solicitation to provide people with a convenient way of purchasing electric household necessities. He should explain that he has been assigned a definite territory will call about once a month, requesting the privilege of supplying the electrical needs for the household.

He will make it known that his company is sponsoring the General Electric kitchen idea and will inquire as to what kitchen appliances are being used. Reports containing this information will be kept for homes called upon.

Should the junior salesman make a sale of a small appliance, it will be delivered the next day by the kitchen specialist, providing entree for him into the home of a possible prospect.

The kitchen specialist will meet with his junior salesmen every night to hear the report of their work.

In the morning he will canvass a specified section with the objective of making three kitchen presentations to new prospects. In the afternoon he will set out to call on five users, using the kitchen approach.

Appointments for sales demonstrations will be made with interested users, while users unable to consider the kitchen plan will be enrolled in the user campaign.

A New 'Approach'

The kitchen specialist will also call back without appointment on registered refrigerator prospects, to tell the "new" all-electric kitchen story. After dinner he will make call-backs to give complete demonstrations.

The kitchen method of approach mentioned above is comparable to the investment program idea used by life insurance salesmen or the "office layout and work routing" story used by successful office equipment salesmen.

This method of approach is one in which the salesman shows the housewife how her whole kitchen operating unit may be combined scientifically to eliminate drudgery and to save money. Interest of the housewife is captured by discussing her entire problem of buying, preserving, and preparing food.

Uses 'Step By Step' Method

In making the initial call or "cold canvass," the kitchen specialist merely asks the privilege of presenting the kitchen planning idea and getting the housewife's opinion of it.

Once inside, the salesman is able to bring his kitchen sales portfolio into play, showing the housewife illustrations of kitchens, old and new. He may ask to see the layout of her kitchen, and if he achieves this, he will suggest the "step-by-step" plan (that is, buying one major appliance at a time, with the all-electric kitchen as the ultimate end) of improving the kitchen.

The kitchen specialist will also explain the service of the Kitchen Institute where, if he will be allowed to take measurements and make a sketch of her kitchen, the housewife will receive from the institute a detailed drawing, in colors, of the way her kitchen would look if modernized.

It is pointed out that by using the kitchen approach as a lead-in to an immediate refrigerator sale, the salesman has a good chance of selling the range and dishwasher at some future date.

A further point is made that owners of a competitive make of refrigerator can be considered as good prospects for a range, dishwasher, or complete kitchen.

Users Used in Two Ways

Users of General Electric refrigerators are naturally to be considered as first-class prospects. Where they fail to profess interest in the all-electric kitchen idea, the salesman is urged to interest them in the user-prospect activity, whereby they will receive cash prizes for turning in names of prospects on authorized coupon blanks, if the name turned in results in a sale.

To make it possible for distributors and dealers to install displays of all-electric kitchens in their showrooms, General Electric Kitchen Institute has designed several standard units for that purpose, the distributors were told. A book containing photographs and blueprints was distributed to those in attendance.

The kitchen units are correct examples of all-electric kitchens in compact arrangement for display and demonstration use. They are portable and may be moved from the showroom floor for use at conventions or cooking schools.

New Dealer Plan

A plan whereby the General Electric Co. will henceforth assume all selling expense, absorb all advertising costs, and give a full discount on all sales made by a retail specialist is now being presented to General Electric dealers and prospective dealers.

Only requirements made of the dealer under the new "G. E. sales pilot merchandising plan" are that he purchase a quantity of appliances sufficient for display purposes, exhibit them properly, carry his customers' accounts, and do the installing and servicing on all G. E. equipment sold in his territory.

Extension of Department Store Plan

This new scheme of increased factory aid to dealers is a further application of the plan adopted by G. E. distributors several months ago, by which they have been pushing sales of G. E. products by installing G. E. departments in large department stores, operated by G. E. men—thus linking the sales skill of appliance specialists with the goodwill of a local merchant.

The new dealer plan is built around the G. E. "sales pilot," one of the company's 5,000 sales specialists (salesmen trained by distributors). To every group of approximately 10 General Electric dealers, one of these "sales pilots" will be assigned for full-time work.

Cleveland officials estimate that each sales expert will have approximately 200 full working days to spend in his territory. Estimating that his territory will have a quota of about $50,000, the pilot will have one day for each $250 of quota in his district.

Expert Help for the Dealer

This means that each dealer with a $5,000 quota for the year will receive 20 days' help from the sales expert; each dealer with a $7,500 quota will receive 30 days' help from the sales pilot.

All dealers will be asked to keep a file of their prospects, which will be used by the sales pilots on their visits to the dealerships. Dealers will be allowed to close all sales possible between the pilots' visits.

When, through his own efforts, any dealer builds up a sales volume large enough to warrant the hiring of a full-time specialty salesman, the General Electric Co. will alter that dealer's contract to take care of the additional expense with a larger discount.

General Electric officials say that they will not ask any dealer to make any investment of time or money in sales training or advertising.

Sales Promotion

Dozens of new pieces have been prepared for General Electric's 1933 advertising and sales promotion campaign.

Among these are a series of one-cent post cards—15 in all—designed especially for use by dealers in towns where there are no newspapers, and for those whose activities are limited to trade areas.

Direct Mail Plans

Seven of the cards concern the G. E. refrigerator, and are intended for weekly mailings. Three of them discuss the company's electric range. One card advertises the G. E. dishwasher, and four of them carry the message of the all-electric kitchen.

Another of the company's 1933 advertising projects is in the form of panel outdoor poster advertising handled by the Criterion Advertising Co. This will be used principally by distributors.

Distributors will indicate the number of panels (8 ft. high and 4 ft. wide) they wish to use, and the desired locations of the panels. The Criterion Co. will place the panels on the outside walls of busy store buildings in the neighborhood shopping areas specified by distributors. Displays, all of which concern the G. E. refrigerator, will be changed monthly.

Seven pieces comprise the General Electric household refrigerator direct-mail materials for 1933. First four of the folders are intended for use in weekly mailings, while the last three are to be used for monthly mailings, although other mailing schedules may be used.

Piece No. 1 has economy as its selling theme. Theme of the second piece is permanency. Quality is the theme of the third piece, while the fourth carries a message of "public preference."

In the fifth folder, the reader will find presented "the electrical depend-

(*Continued on Page 9, Column 1*)

RIGID TEMLOK ADDS STRENGTH AND LONG LIFE TO CABINET FRAMES

YOU know what causes cabinet failures. Mostly the fault lies with poor insulation, improperly installed. Use of rigid insulation, furnished in accurately cut pieces, gives the best assurance of a tight fit to the frame. Then air leaks to the inner crock are definitely eliminated.

You can be sure *your* cabinets will perform efficiently if they're insulated with Armstrong's Temlok! This rigid board cannot settle or pack and leave moisture—attracting air spaces, no matter how much it may be shaken or jarred!

You'll find plenty of other advantages in Armstrong's Temlok. It adds strength to cabinet frames. Temlok has a low coefficient of thermal conductivity (.28). It is highly moisture-resistant. It weighs but .9 lb. per board foot. Furnished in fabricated sets, cut to size, Temlok is easy to handle—speeds up assembly time. And it helps on the sales floor because consumers know Armstrong as a maker of fine linoleum and high quality insulation. Temlok meets the high standards set for all Armstrong products.

Use the coupon below for free samples and complete details of Temlok Insulation. Ask us too, how the Armstrong Life Test Room can serve you. Armstrong Cork & Insulation Company, 917 Concord Street, Lancaster, Penna.

Armstrong's (A) Product

ARMSTRONG CORK & INSULATION CO.
917 Concord St., Lancaster, Pa.

Please send me complete details regarding Armstrong's Temlok Refrigerator Insulation.

☐ Please send sample.

Name.....

Street.....

City.....State.....

G. E. SPONSORS NEW SALESMEN'S COURSE

(*Continued from Page 8, Column 5*)

ability of General Electric," and in the sixth he will read the story of G. E. performance. Piece No. 7 summarizes the selling points of the G. E. refrigerator.

One of the new G. E. publications is a mimeographed book for distributors, telling them how to set up and operate a home service program during 1933.

Another of the sales promotional pieces prepared for 1933 is a 50-page, two-color book intended for executives of public utilities. This central station manual contains a complete outline of all the sales services offered by General Electric to utility companies.

In addition to the sales services themselves, the manual presents a preview of the G. E. product lines, the load-building and revenue-producing capacities they offer, and all G. E. sales and service policies of interest to central stations.

Prepared especially for apartment house owners and operators is a new handout or mailing piece in which are reproduced a number of testimonial letters from apartment house executives using G. E. refrigerators in their properties, and a listing of instances in which G. E. units have replaced refrigerators of other makes.

One small piece has been prepared for handout purposes in distributor and dealer salesrooms. It bears two messages: the "immediate economy of the G. E. Junior," and the "long-time economy" of the more expensive G. E. Monitor Top refrigerator.

Four pieces will be used in the promotion of commercial sales this year. One is a 32-page book printed in rotogravure, intended for use by the commercial salesman in talking to owners of meat markets and food stores.

Profusely illustrated, it carries pictorially, the story and features of conditioned-air display cases, presents pictures and descriptions of the complete line of G. E. commercial cabinets, cases, and units.

Another rotogravure booklet tells the story of the economy of conditioned-air commercial refrigeration to restaurant owners and operators. In this book also, pictures are relied upon to "sell the prospect's eyes" on the commercial equipment.

For general mailing and handout purposes to all prospective buyers of new commercial equipment, a large three-color broadside has been prepared to talk "economy," and present an idea of the company's range of commercial equipment.

A small handout or mailing piece has also been prepared for meat market prospects. Its theme is "turn 'no sale into 'sure sale' with G. E. conditioned-air refrigeration."

In the March 11 issue of *The Saturday Evening Post*, General Electric will make its official public announcement of the new 10-Star Monitor Top refrigerator and the new G. E. Junior, using a double-page spread in color.

Sales Training

Prepared by sales experts of Chicago's LaSalle Extension University, a new course in "modern kitchen salesmanship" has been made available for all salesmen of General Electric refrigerators, ranges, and dishwashers.

The course is a complete training in salesmanship as applied especially to the G. E. all-electric kitchen. Five assignments, each to be studied over a two-week period, will comprise the main training course.

Texts 1, 2, and 5 are basic texts applicable to the sale of G. E. refrigerators, ranges, dishwashers, and other appliances. Assignments 3 and 4 apply particularly to refrigerator salesmanship.

First assignment will present a course in human buying habits and motives, the five buying decisions, and the need for coordinated arrangement of kitchen appliances. Second text will outline the chief principles of salesmanship.

In the third assignment will be given the best methods of translating mechanical features into values to the buyer, of tying up advantages with buying motives, of transforming desires into decisions. Fourth assignment will instruct the salesman in proper sales closure procedure.

Last of the texts will offer instruction in working with new prospects, finding prospects, using the user, etc.

With this basic sales course completed, G. E. salesman will have an opportunity to take two supplementary courses—one on electric range salesmanship, the other on dishwasher salesmanship.

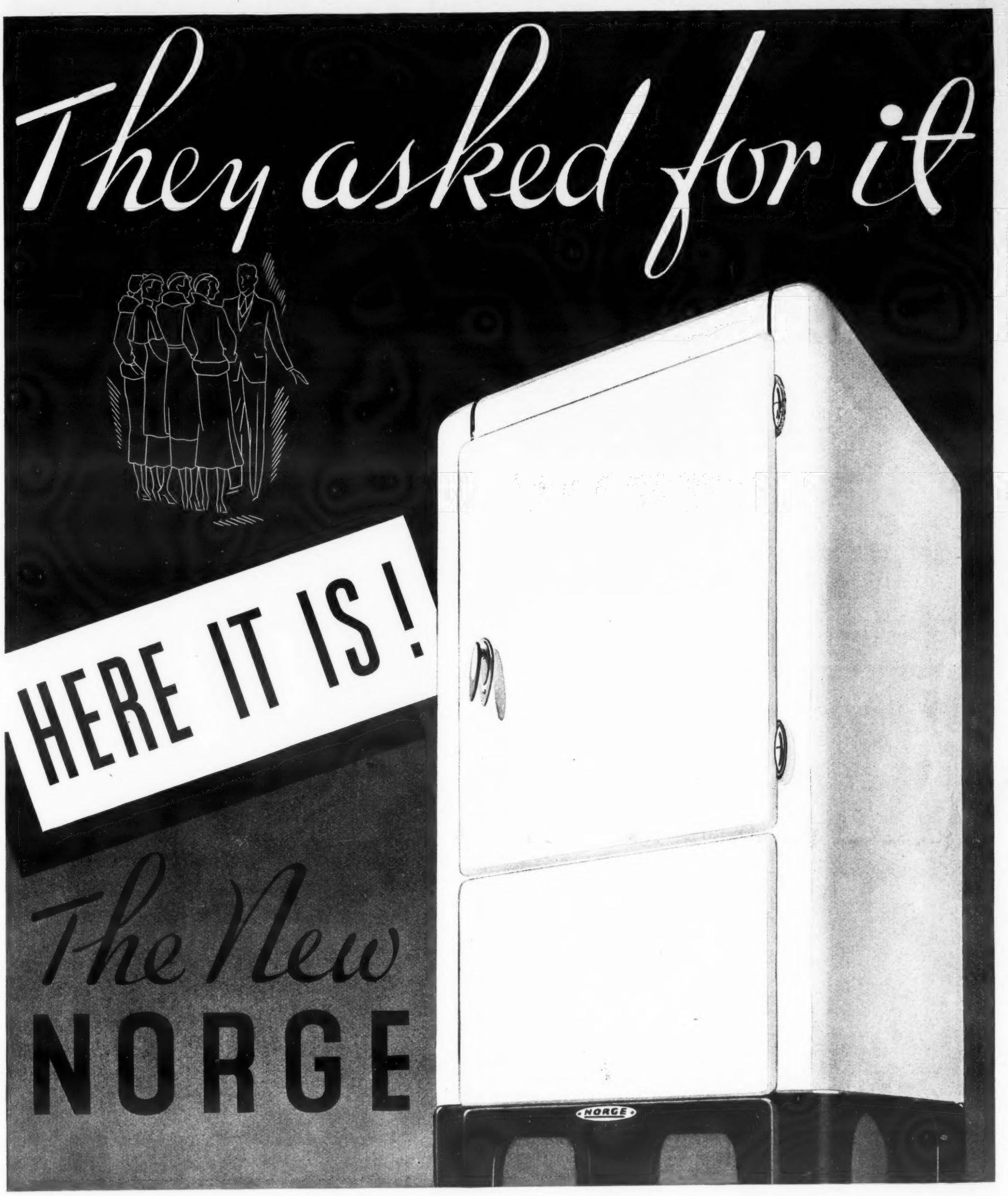
Salesmen will be asked to bear $5 of the expense of the basic course.

Who's Who

Members of distributor organizations attending "The Big Parade" were as follows:

Clark Adams, Inc., Atlantic City, N. J.—

(*Concluded on Page 11, Column 1*)



HERE IT IS ★ with more Rollator Power than ever before!

HERE IT IS ★ in a new style cabinet with a massive ebony-black base!

HERE IT IS ★ with every convenience... and each one a selling feature in itself.

HERE IT IS ★ with a real profit deal to dealers.

HERE IT IS ★ with greater service freedom.

HERE IT IS ★ with established consumer acceptance. The momentum of the Norge sensational growth helps you prosper.

HERE IT IS ★ as specified by 100,793 women who told Norge what they wanted in modern refrigeration.

NORGE CORPORATION; DIVISION OF BORG-WARNER CORPORATION; 658 E. WOODBRIDGE ST., DETROIT, MICH.

THE ROLLATOR: *A roller rolls and there's ice. That's all there is to the simple operation of the Norge Rollator mechanism.*

NORGE

Rollator refrigeration

COMPANION MERCHANDISE

NEW CLOCK DESIGN IS ADOPTED BY G. E.

SCHENECTADY, N. Y.—A new design of electric clock which eliminates the common dial with hands, and substitutes large numerals through small windows in the front plate of the clock, has been developed by engineers of the General Electric Co.

The clock is of the so-called cyclometer type. Time is read directly in hours and minutes, and the second hand is replaced by a rotating dial which indicates the time in seconds. The numerals are illuminated by a small Mazda lamp which provides sufficient light to read the clock figures in the dark.

The clock is operated by a small synchronous motor connected by a gear arrangement to three revolving wheels having the numerals indicating the true time.

It is thought that the clock would be particularly convenient for small children who experience trouble in reading the ordinary clock, and in timing certain operations such as long distance calls.

OPENS ELECTRIC KITCHEN

FT. WAYNE, Ind.—E. A. Barnes Electrical Appliances, Inc., General Electric dealer, recently opened a new store here. The store is equipped with a General Electric all-electric kitchen.

A 'Fair' Trial

BETTINA HALL, actress and dealer, tests a vacuum sweeper.

FADA BUILDS AUTO, PORTABLE RECEIVERS

NEW YORK CITY—Two new radio receiving sets, the "Motoset" for automobiles, and the "Fadalette," a portable model, have recently been introduced by Fada Radio and Electric Corp.

The "Motoset" will list at $79.50. It has three major components, namely the radio set proper which is sheathed in a weather-proof metallic container; the dynamic speaker; and the control panel with automatic lock.

There is a noise suppression equipment and a remote gear control adaptable to the steering posts with adjustable straps for posts of various sizes.

The automobile receiving set is a superheterodyne using eight new-type automobile tubes.

The "Fadalette" lists at $25 and is a compact receiver, weighing but 6½ lbs., which comes in an embossed leatherette case.

It can be used with either a.c. or d.c. current and requires but 20 ft. of antenna for operation. It is equipped with a dynamic speaker.

Westinghouse Markets Ultra-Violet Lamps

EAST PITTSBURGH, Pa.—A new Westinghouse ultra-violet lamp, designed especially for home treatment use, has been placed on the market by the Westinghouse Electric & Mfg. Co.

A few minutes exposure under this lamp will cause a mild sunburn. The lamp operates on alternating current of 110-120 volts and 60-cycle frequency.

The standard model is available in either a light bronze or ivory trimmed with chrome finish. The reflector and arm are adjustable both for height and direction.

Philadelphia Electric and Radio Show

COLLECTIVE ACTION FOR MARCH

To gain greater public acceptance for electric refrigeration—to cultivate a new crop of buyers is the common aim of the electric refrigeration industry.

The purpose can be accomplished in only one way —COOPERATION. By welding individual efforts into a greater mutual one, sales outlets in any community can accomplish together what they cannot accomplish independently.

There are many means of cooperating but none more effective and timely for March than a Co-operative Electric Refrigeration Exhibit.

An activity of this nature, involving the co-operation of all local sales outlets may be readily adapted to any town, large or small and may be fitted to even the most limited funds.

It may be strictly an electric refrigeration show. It may be a leading feature of an all-electric show, of a food show or of a better business show. It may be a part of a Child Welfare Week or it may be confined to an exhibit in the lobby of the principal motion picture theatre.

At nominal cost, the Bureau offers promotional materials to aid in advertising and conducting a cooperative exhibit. These consist of illustrated chart lectures, truck banners, tire covers window display signs, newspaper mats, envelope stuffers, etc.

Write today for further information concerning cooperative shows and promotional materials.

INVEST IN AN ELECTRIC REFRIGERATOR

ELECTRIC REFRIGERATION BUREAU

420 Lexington Ave., New York City

Cooperative Electric Range Campaign Brings Results In Philadelphia

PHILADELPHIA—Electrical appliance dealers in the metropolitan area here sold a total of 645 electric ranges in 1932 as compared to a total of 543 for 1931. Of the 645 sales made in 1932, 464 were completed in the last four months.

The story behind the record hung up in the last four months is the story of a cooperative autumn campaign on electric cooking, conducted by the Electrical Association of Philadelphia. The campaign was opened on Sept. 12 and was concluded on Dec. 24.

In August it appeared that the 1932 sales of electric ranges by dealers in the Philadelphia metropolitan area would equal less than half of the 1931 volume unless something was done to achieve an immediate increase in sales.

Managing Director George R. Conover of the Electrical Association of Philadelphia made a survey which indicated that the problem of increasing sales could be solved only by overcoming the lack of interest on the part of distributors and retailers in electric ranges and increasing their sales knowledge of the product.

Few Ranges Used at Home

It was found that with few exceptions, distributors and dealers did not thoroughly understand the operation of electric ranges and lacked the fundamental knowledge of electric cooking essential to a proper sales presentation.

Few dealers were using electric ranges in their own homes, and none had ranges connected in their stores, to enable them to demonstrate under actual operating conditions.

This situation was discussed at a meeting of the range division of the electrical association, comprising representatives of the range manufacturers and distributors. The major features of the campaign were outlined at this meeting, so that distributors could immediately prepare retail outlets for participation in the activity.

As a result of this meeting, more than 150 dealers secured ranges for display and signified their attention of actively participating in the campaign. Of these, 23 connected ranges in their stores and 64 installed ranges in their homes.

Comparative Figures

That the movement to get dealers to use and demonstrate ranges was justified was disclosed in Managing Director Conover's final reports, which showed that dealers using electric ranges at home had sold an average of 5.4 ranges during the campaign, compared with an average of only 1.6 for those using other forms of fuel.

It was further disclosed that dealers with connected ranges in their stores sold an average of nine ranges compared with an average of two for those who could make only a "cold demonstration."

The metropolitan area was divided into 15 sections for the campaign. Dealers in each section were organized and executive committees comprised of 51 dealers were appointed. These committees became members of the campaign advisory committee, which also included members of the range division. Horace P. Liversidge, president of the Electrical Association of Philadelphia, headed this committee.

Mr. Conover was named campaign director and S. W. Griselle of the association staff functioned as campaign manager.

Quotas Assigned

Each dealer was assigned a quota, determined by a study of the dealer's sales volume, size of organization, type of store, and other factors. Dealers were then classified by quotas as follows:

Class "A"—10 sales and over.
Class "B"—5 to 9 sales.
Class "C"—2 to 4 sales.

Prize funds for each section were accumulated in proportion to the sales reported. If the section's quota was made, this fund was distributed among the leading dealers in each class, on a basis designed to stimulate competition between dealers in each locality.

The amounts of these cash prizes were increased 25 per cent when won by dealers using electric ranges at home. A 25 per cent increase also applied to prizes won by dealers having connected ranges in their stores.

Grand prizes were offered to encourage competition between dealers throughout the entire area. These consisted of all-expense tours to Havana, Bermuda, and Miami to the leading dealers in Classes A, B, and C, respectively.

Two additional prizes were offered to stimulate competition between the sectional groups. Members of the group finishing with the highest percentage of quota drew for an electric range on the basis of one chance for each sale made during the campaign. Members of the section finishing with the second highest percentage of quota also drew for a range.

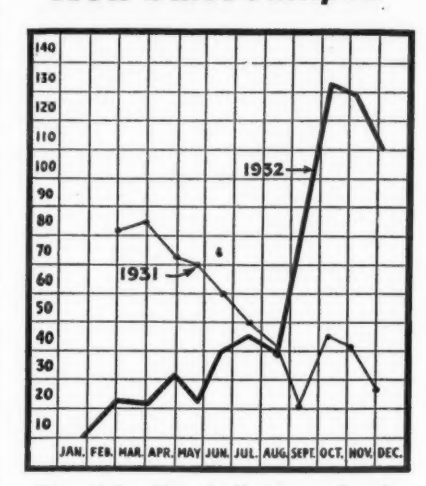
As a further encouragement to the dealer to install a range in his store, the Electrical Association reimbursed the dealer for the cost of such installation on the basis of a fixed amount for each sale made during the campaign.

The Philadelphia Electric Co. cooperated by installing ranges free of charge and by offering to take over the financing of time-payments sales by dealers.

The dealer was allowed to assign his contracts to the utility for financing under the following conditions, namely; a minimum down payment of $2 and a maximum term of agreement of not more than 24 months; the addition of a carrying charge of 2 per cent plus one-half of 1 per cent per month on the unpaid balance; dealer responsibility for service during the guarantee period; and dealer responsibility for reverts occurring on their sales.

In order to stimulate interest among employes throughout the electrical industry, the Electrical Association offered a prospect bonus to any employe of a dealer, distributor, or manufacturer (range salesmen excepted) who furnished the name of a prospect to whom an electric range was sold during the campaign.

How Sales Jumped



The light line indicates sales in 1931, when there was no campaign under way. Heavy line indicates 1932 sales and effect of cooperative campaign which opened Sept. 12, 1932.

Newspaper advertising in Philadelphia dailies during the campaign spotlighted testimonials of electric range users. Billboards and radio were also used during the campaign. Thousands of posters decorated dealer windows and trucks operated by distributors and the utility.

An attendance of more than 20,000 housewives was recorded at the 76 cooking schools held in Philadelphia and the surrounding territory during the period of the campaign. Sizable prospect lists were secured by dealers who participated in these schools.

Average Price $157.54

One of the most gratifying results of the campaign, according to Managing Director Conover, was the fact that the average retail price of the ranges sold by the dealers during the campaign was $157.54, this average being attained in the face of considerable advertising on "leader" ranges sold at $115 and less.

An analysis of dealer sales discloses the following facts relative to the price classifications in which the ranges were sold:

Retail Price of Ranges	Percentage of Total Sales
Under $120	26 per cent
$120 to $149	32 per cent
$150 to $199	24 per cent
$200 to $249	9 per cent
$250 to $299	7 per cent
$300 and up	2 per cent

Fifty-four of the 114 dealers who sold ranges during the campaign had not sold them previously, and many of them indicated that they would continue an aggressive merchandising policy on this appliance after the campaign closed.

Manufacturers and distributors of the following ranges actively participated in the campaign: Countess, Electrochef, Estate, Hotpoint, Graybar-Crawford, L & H, Monarch, Prosperity, Quality, Standard, Universal, and Westinghouse.

Wayne Literature Gives Data on Boilers

FT. WAYNE, Ind.—One of the latest pieces of consumer literature put out by the Wayne Oil Burner Corp. gives specifications on the leading makes of boilers and furnaces, with recommendations as to the proper Wayne burner to be used in conjunction with the boiler.

Data is printed on the following boilers: Pacific, Lennox Air-Flo, Amerigan Radiator No. 12, Bass, Economy-International, Richardson & Boynton, Dailaire, Kewanee, and Weil-McLain.

Illustrations of the various boilers are done in color, and the general tone of the entire piece of literature is in keeping with the Wayne direct-mail presentation.

SALES CHIEFS HEAR G. E. SPRING PLANS

(*Concluded from Page 9, Column 5*)

Clark Adams; Albert Ahrens Co., Oklahoma City—Albert Ahrens.

Alabama Refrigeration Co., Birmingham, Ala.—Gordon Smith; W. D. Alexander Co., Atlanta—W. D. Alexander, W. B. Stringham, L. J. Spiers.

Bard Barger, Inc., Columbus, Ohio—Turner Barger, R. T. Bard, A. V. Bice, G. L. Thompson, V. W. Thompson, J. W. Tracy, John Dodds, R. R. Hollister, Geo. Pennick, Al. Meedle, Carl Neff, C. C. Robinson, M. Imholz, W. E. Brockschmidt, Earl Wagner.

George T. Bauder Co., San Diego, Calif.—G. T. Bauder; George Belsey Co., Ltd., Los Angeles—Geo. Belsey; L. H. Bennett Co., Ltd., San Francisco—L. H. Bennett.

H. G. Bogart Co., Toledo—H. G. Bogart, Jr., H. F. Heyman, F. J. Jeffries; Breckenridge, Inc., Springfield, Mass.—D. E. Breckenridge.

Judson C. Burns, Inc., Philadelphia—J. C. Burns, R. P. Burns; Caswell, Inc., Detroit—S. C. Caswell, C. G. Blackburn, Gene Cross, Al Truax, M. K. McIntyre, Paul Dettling.

Rex Cole, Inc., New York City—Rex Cole, M. E. Pipkin, R. Stevenson, L. H. Jenks, Paul Hichborn, Jno. Massimi, E. H. Campbell.

E. O. Cone Co., El Paso, Tex.—E. O. Cone; E. Pulver Cook, Inc.—E. P. Cook; R. Cooper Jr., Inc., Chicago—C. J. Bassler, C. G. Rood, L. H. Kohlman.

Cushman-Willis Co., Cleveland and Akron, Ohio—F. H. Cushman, Dan Willis, Art Willis, H. N. Trumbull, H. G. Welfare, Carl Ballus, R. F. Daven, D. R. Cannon, H. H. Smith, Robt. Sausaman.

L. W. Driscoll, Inc., Charlotte, N. C.—L. W. Driscoll, Lehman Wood, W. L. Hopkins; A. S. Dunning, Inc., Duluth, Minn.—A. S. Dunning; Edmundson Refrigerating Corp., Houston, Tex.

Electric Home Appliance Co., Charleston, W. Va.—S. E. Stewart; General Appliances, Inc.—T. J. Sullivan.

Gentsch & Thompson, Inc., Boston—W. L. Thompson, Geo. Pierce, Ernest Robinson, R. C. Payson; Glueck & Co., Kansas City, Mo.

Gould Farmer Co., Syracuse, N. Y.—Chas. Gould, E. M. Farmer, Curt Logan, A. P. Rafferty; S. C. Griswold, Inc., Dallas, Tex.—S. C. Griswold.

Philip H. Harrison & Co., Newark—P. H. Harrison, A. B. Judge, T. E. Babson; The Hines Co., Baltimore—D. F. Hines, A. H. Johnson, O. E. Weitzel, L. Jennings, H. H. Schindel.

W. N. Hogan, Inc., Wheeling, W. Va.—W. N. Hogan; Hoosier Electric Refrigerator Corp., Indianapolis—A. F. Head, W. I. Hess.

James & Co., Inc., St. Louis—L. D. James, R. L. Hughes; A. Wayne Merriam, Inc., Schenectady, N. Y.—A. W. Merriam, A. O. Linzey, W. M. Page; Modern Home Utilities, Inc., Waterbury, Conn.—J. E. Neily.

R. S. Montgomery, Inc., Richmond, Va.—R. S. Montgomery, F. H. Swaffin; National Electrical Supply Co., Washington, D. C.—C. L. McCrea; A. M. Pickett; O'Bannon Bros., Little Rock, Ark.—S. P. O'Bannon.

Ochiltree Electric Co., Pittsburgh—W. H. Ochiltree, J. E. Morton, J. Hauserman; N. K. Ovalle, Inc., Harrisburg, Pa.—W. M. Hutchison, D. B. Millar, N. K. Ovalle, E. T. Shephard.

George Patterson, Inc., St. Petersburg, Fla.—Geo. Patterson, J. H. Bradley; Pendergraph-Brown, Inc., Nashville, Tenn.—H. A. Pendergraph, C. O. Brown, F. Loughran, Jr.; Perry Browne, Inc., Columbia, S. C.—W. M. Perry, R. E. Browne; E. H. Schaefer Corp., Milwaukee—E. H. Schaefer.

Storz Electric Refrigeration Co., Omaha—A. J. Finck, Henry Ervin; O. F. Stuefer, Inc., Minneapolis—O. F. Stuefer; B. K. Sweeney, Inc., Denver—B. K. Sweeney.

A. H. Thompson-Sterling Co., Inc., Louisville, Ky.—M. E. Brown, L. B. Turnbull, L. H. Miller, R. E. Kaiser, K. F. Stutz, Floyd Marple; Valley Electrical Supply Co., Fresno, Calif.—H. H. Courtright.

Frank W. Wolf, Inc., Buffalo—F. W. Wolf, J. Ecclestone, H. J. Morgenstern, C. J. Rohrer, L. B. Tedesco, J. Sorg, C. S. Coleman, Guy Reynolds; Wright Bros. Refrigeration Co., San Antonio, Tex.—Mark Wright.

The home office in Cleveland was represented by the following men:

M. T. Bard, H. H. Bosworth, R. C. Cameron, W. W. Campbell.

F. Chandler G. J. Chapman, F. M. Corliss, W. J. Daily, K. R. Davis, J. T. Dickson, Jean DeJen, A. R. Green, M. D. Grow, J. G. Gaines.

W. E. Hart, C. H. Hinrichs, H. T. Hulett, H. E. Johnson, G. D. Kobick, W. E. Landmesser, H. C. Mealey, A. T. Millott.

M. F. Mahony, E. A. Nolan, W. C. Noll, E. H. Norling, H. O. H. Quinn.

T. K. Quinn, R. E. Remley, R. R. Rimbach, N. B. Ronning.

A. L. Scaife, R. E. Sheahan, R. C. Shaw, W. P. Smith, B. F. Slye, G. G. Smith.

H. P. Smith, L. W. Smith, A. M. Sweeney, A. T. Taft, W. M. Timmerman.

A. A. Uhalt, J. Tuteur, J. M. Walker, G. C. Wasson, E. H. Wiggs, P. B. Zimmerman, M. J. Young.

T. B. Allen, R. H. Ferguson, A. E. Freshman, F. T. Harvey, B. C. Ritter, G. Ruck, and P. H. Dow were the district merchandise managers in attendance.

Several men from the General Electric factories attended the meeting.

From Schenectady: L. A. Hawkins, A. R. Stevenson, Jr., E. L. Manning, E. L. Rich, B. L. Delack, W. L. Merrill, W. B. Hill.

H. A. Synwoldt, R. V. Burleigh, J. S. Cooley, D. F. Newman, E. R. Fitzgerald, and R. F. Roider.

From Erie: H. L. R. Emmett, J. L. Knight, Burton Crane, J. C. Brightfelt, J. St. Lawrence, and A. J. Redpath.

From Fort Wayne: R. E. King, C. Lichtenberg, Max Holz, P. C. Morganthaler, A. W. Bireley, K. H. Huyette, Clark Orr, W. S. Goll, H. F. Briggeman.

The following utility executives and dealers were among those present:

R. S. Bell of Commonwealth & Southern; Cyrus Barnes of C. H. Tenney Co.; E. A. Barnes, dealer; H. H. Bodge of Narragansett Electric.

R. M. Bleak of Utah Power & Light; L. W. Brainard of Idaho Power; H. A. Brooks of Potomac Electric Power.

J. W. Busch of Illinois Power & Light; H. L. Buckley of Utility Purchase & Supply; C. Chambers of Edison Light & Power; E. L. Canfield of American Gas & Light; J. P. Connolly of South Carolina Power; C. A. Collier, O. M. Jackson of Georgia Power.

H. W. Cooper of Wisconsin Power & Light; C. L. Dunn of Ohio Public Service; Ray Fisher, dealer; F. M. Houston of Rochester Gas & Electric; W. H. Hodge of Byllesby; Fred Ingraham of Idaho Power; H. A. Keys of Byllesby; Frank Lawton, dealer; C. H. Locke, dealer.

J. R. Lavelle of Central Public Utilities; Fred Love, dealer; H. D. Makeever of Peoples Gas & Electric.

V. H. Moon of Middlewest; Merrill Morrow of Pennsylvania Power & Light; T. S. Murray of Tidewater Power; C. A. Nash of United Light & Power.

A. S. Olson of Ft. Dodge Gas & Electric; L. R. Parker of Commonwealth & Southern; C. J. Prashaw of Missouri Power & Light.

W. R. Putnam of E. B. & S.; G. B. Richardson of Texas Power & Light; C. R. Rudy of Associated Gas; J. T. Schilling of Des Moines Electric Light; M. E. Skinner of Niagara Hudson.

J. M. Stedman of Pennsylvania Power & Light; J. S. Sutherland of Alabama Power; R. E. Swift, Atlantic City Electric.

A. E. Ward of Associated Gas & Electric; Joseph Wayne of Edison Power & Light; Leslie Weiss of Metropolitan Edison; C. S. Mikulesky of Wisconsin Gas & Electric; I. Wilder, dealer.

Don Schmidt, dealer; Roger Fisher, dealer; Harry King, dealer Mr. Cairns, dealer.

F. Williams, dealer; J. K. Keller, dealer; Mr. Kaser, dealer; H. Sotzen, dealer; H. Herman, dealer; H. F. Bower, dealer.

Mr. Trueman, dealer; Don Mitchell, dealer; Geo. Hopperton, dealer; Frank Hopperton, dealer; A. L. Oppenheimer, dealer; Charles Davis, dealer.

Ed. Mann of Lake Erie Power & Light; Mr. Matherson of Ohio Electric Power; G. T. Perrine of Iowa Southern Utility; E. N. Otterbein of People Light Co.; P. Weeks of Peoples Power Co.

Some department store representatives attending the meeting were:

E. Goldstein, R. Grace, Tom Stackpole, and N. P. Wright of the May Co., Cleveland; C. E. Trueman, Mr. Hetricks, and Mr. Levine, from Polsky's, Akron, Ohio.

Mr. Tedesco, from Larkin's department store, Buffalo; A. Truax of Trancula, Grand Rapids, Mich.; Mr. McIntyre, Smith-Bridgman, Flint, Mich.; Mr. Wolfe, O'Neill's department store, Akron, Ohio.

Mr. Davies of William Taylor & Son, Cleveland; and Mr. Ogden, Hudson's, Detroit.

WEAPONS

We reprint herewith a letter published in Electric Refrigeration News on Feb. 8th, 1933. We consider the appearance of this letter at this time most fortunate. We congratulate the editor of this paper on its publication, as this letter brings out in the open and puts into print for all to see the principal weapon which has been surreptitiously used in an attempt to stem the tide of our product's rapidly increasing popularity.

This letter is a weak attempt to answer our clearly stated analysis of the industry's present position, published in the Jan. 18th issue. The use of innuendo and distortion of facts, clearly indicate the author's recognition that our company has become a force to be reckoned with; and with only such weapons for defense against our accomplishment, it also is clearly evident that in his mind we have become a factor to be feared.

For our part we have entered the lists with three weapons: A product beyond compare, policies calculated to give our distributors and dealers larger profits for the year 1933 than anyone else in the industry is in a position to offer, and a business structure of impregnable soundness.

We welcome other manufacturers meeting our challenge with weapons of equal value and character.

The Polk Directory lists the author of this letter as Vice-President and Technical Assistant of one of the large refrigeration companies. A man occupying such office is not in a position to plead ignorance regarding the difference between "assembled" merchandise and "manufactured" merchandise. We therefore definitely state: We question the sincerity and the motives of the writer of this letter. Any capable man occupying the position of vice-president and technical assistant of a large manufacturing company well knows the difference between "manufacturing" and "assembling."

Potter Refrigerators are not "assembled" *in any sense of the word. They are* "manufactured" *from their beginning to their completion strictly in accordance with our own specifications and according to our patented designs, largely with tools bought, paid for, and owned by us.*

The factories with which we have placed our manufacturing contracts are too well established in the trade to be questioned by anyone.

We wonder whether the author of this letter would have the temerity to label the Westinghouse Company as mere "assemblers" and therefore unsound, because they likewise have had the Rex Manufacturing Company build cabinets under contract to their specifications.

We wonder also whether the author of this letter would label the Brunswick-Kroeschell Company as mere "assemblers" and also unsound, because they in their turn saw fit to contract for some of their production with the Universal Cooler Corporation.

Again we wonder whether the writer of this letter would label his own company as "assemblers" because they purchase electric motors from Wagner and sundry parts from other manufacturers according to their own specifications.

In view of his stressing "automobile experience", we wonder if according to his theory, the Ford Motor Company are "assemblers" because they saw fit to contract with the Briggs Manufacturing Company for the building of bodies to the Ford Company's specifications.

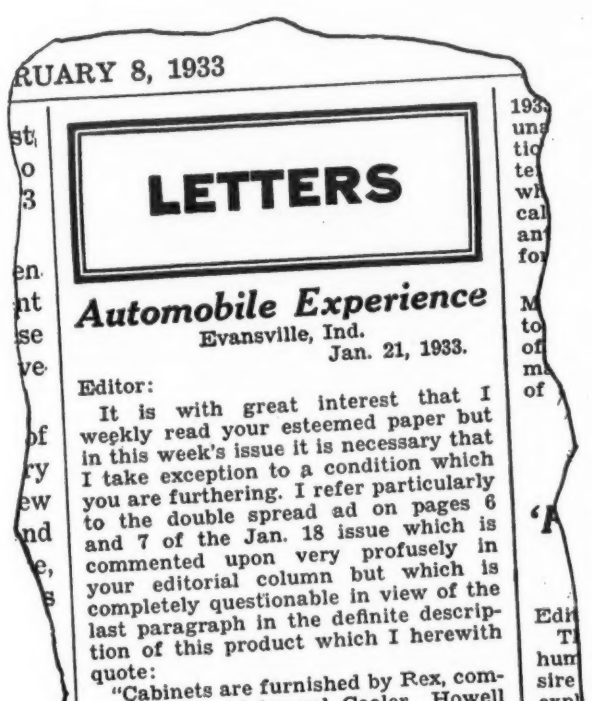
This type of attack on our company can be engendered only by fear. We prefer to believe it the unthinking act of an individual and not the expression of a policy of the company with which he is connected. However, when a high ranking officer in a large competing manufacturing company shows such fear of us, is it not an indication to distributors and dealers that our product and our policies are well worthy of their personal investigation; and is it not an indication that we have an unusual money-making proposition to offer them? What better proof is needed of the onward sweep of our progress?

So far as the somewhat ambiguous third paragraph of the letter is concerned, it is known throughout the trade that our company, through its engineering brains and business knowledge, is now delivering daily a product which more than fulfills the standards set in our January 18th advertisement.

In conclusion, we agree with the last paragraph of the letter. We not only feel *we have something to sell, we* know *we have the most meritorious product for sale in the industry. If straight-from-the-shoulder statements, dealing with facts and not with innuendo, is to be termed "bally-hoo", we plead guilty. We admit we are in business to make money . . . almost $1,000,000 and over 6 years of effort have been invested to bring us to this position. We are in business to stay. We recognize that our profits and our permanency cannot be gained with bricks and mortar but can be assured only by making continued profits for our distributing outlets.*

Because this is a first principle with us, we offer distributors and dealers a franchise which will make real money for them *in 1933*.

We have the most potent sales weapon available to meet 1933 conditions. If you are properly equipped in your territory to use such a weapon for the making of real profits, write us.



RUARY 8, 1933

LETTERS

Automobile Experience

Evansville, Ind.
Jan. 21, 1933.

Editor:

It is with great interest that I weekly read your esteemed paper but in this week's issue it is necessary that I take exception to a condition which you are furthering. I refer particularly to the double spread ad on pages 6 and 7 of the Jan. 18 issue which is commented upon very profusely in your editorial column but which is completely questionable in view of the last paragraph in the definite description of this product which I herewith quote:

"Cabinets are furnished by Rex, compressors by Universal Cooler. Howell capacitor motors, and Balsam Wool insulation are specified for all models. Shipments will be made from Detroit where the complete refrigerators will be assembled in the Universal Cooler plant."

It may be possible for the above company to be so far ahead in engineering brains and business knowledge to write such an advertisement but it is hardly possible for any one to conceive that all of these things can be accomplished so completely when said concern doesn't build any of their own product.

It seems to me that the electric refrigeration industry could well profit by the experience of the automotive industry insofar as assembled product is concerned as a quick review of the mortality in the automotive industry over the past 15 years shows definitely what happened to those companies who had nothing to sell but the product of other companies.

Please take all of the above constructively as I do not question but what the Tri-Cold company really feels that they have something to sell and are thereby permitted to "ballyhoo" it all they can as their interest is purely that of dollar profit as compared with dollars invested.

C. H. TANGER.

If you have not already received your copy of our booklet—Refrigeration at Cross-Roads, write for it. You will find it the most interesting discussion of the refrigeration industry you have ever read.

President

TRICOLD REFRIGERATOR CORPORATION

296 Delaware Avenue, Buffalo, N. Y.

POTTER REFRIGERATORS

ELECTRIC REFRIGERATION NEWS

The Newspaper of the Industry

Published Every Week by

BUSINESS NEWS PUBLISHING CO.

Also publishers of REFRIGERATED FOOD NEWS (monthly) and REFRIGERATION DIRECTORY and MARKET DATA BOOK (annual)
550 Maccabees Building, Woodward Ave. and Putnam St.
Detroit, Michigan. Telephones: Columbia 4242-4243-4244

Subscription Rates:
U. S. and Possessions and countries in Pan-American Postal Union: $3.00 per year; 2 years for $5.00
Canada: $6.00 per year (U. S. Money)
All Other Countries: $5.00 per year
Advertising Rates on Request

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VOL. 8, NO. 8, SERIAL NO. 205, FEBRUARY 22, 1933

Multiple Selling

GENERAL ELECTRIC has taken a highly significant step in giving its refrigerator salesmen complete sales responsibility for General Electric Kitchens—including, among other appliances, G. E. ranges and dishwashers—in closed territories. These representatives will no longer be just salesmen; they are to be "kitchen specialists." And not only their territories, but their morale will be protected—by lifting the cold canvass burden from their shoulders.

As outlined on page 8 of this issue, the new G. E. retail sales plan embraces the hiring of youthful junior salesmen who will do the canvassing and who will carry on their calls a bag of minor appliances. From the reports of these junior salesmen the kitchen specialist will get his leads; and should a junior sell a curling iron or toaster or other minor appliance, the specialist will deliver it and thus gain ready entrance. Each specialist will work in a closed territory averaging 4,000 meters.

Previous Experience Unsatisfactory

Most interesting conclusion which can be drawn from study of this plan and the thinking which preceded it is the fact that officials of the General Electric specialty appliance department evidently believe that their salesmen can do multiple selling (make adequate presentations of more than one product).

This is contrary to much previous experience in the industry. For instance, one of the notions on which the Majestic refrigeration department was originally predicated was that the same salesmen should be able to sell both radios and refrigerators. Majestic found that it wouldn't work, and recommended that their distributors and dealers form separate radio and refrigeration departments. The same experience was had by other radio manufacturing concerns which entered the refrigeration field.

Solving the Turnover Problem

Williams started out to sell its refrigerators through its oil burner dealers, but eventually had to secure distribution through other channels. Other manufacturers have also discovered that while distributors and dealers can handle companion lines of merchandise with profit, different sets of salesmen are usually required for each product.

Almost every salesmanager in the industry deplores this condition. One of the greatest problems of selling is the turnover of salesmen—how to keep a man on the job during dull seasons. A most obvious answer, of course, is to give him another product which is having a peak season when demand for the product he originally was selling has dropped. Could salesmen learn the varying presentations of different products, and lavish as much enthusiasm on one as on another, they could be kept profitably employed the year 'round.

General Electric's answer is that its new retail selling plan was tested in the field last fall, and has been entirely successful. Key to its success lies in the intimately related nature of the products, and that the story of proper food handling, food economy, and the saving of time and labor in the kitchen is one which applies to all the products in the General Electric Kitchen.

Food Equipment Retailing

Some twenty months ago in this editorial column we suggested that electrical devices for the kitchen should make the very best companion products. From the editorial, "Food Equipment Retailing," in the July 1 issue of ELECTRIC REFRIGERATION NEWS we quote these sentences:

"Undoubtedly the electric refrigerator, its convenience and economy, has opened the eyes of many a housewife to the possibilities of modern kitchen equipment. She has learned new tricks in the preparation of food with this machine, and she is becoming interested in other food handling devices because of her experience with it. . .

"Refrigeration sales organizations which are casting about for lines of companion merchandise may find that other devices for handling food may be the appliances they are seeking . . . Perhaps electric refrigeration dealers may become 'food equipment merchandisers,' and make a specialty of helping the housewife put better meals on the table with less effort and at smaller cost . . .

"The fuss and bother of an old coal stove may prompt the 'lady of the house' to seek a new range which is as trouble-and-worry-free as her new refrigerator. She may decide to look into the merits of electric dishwashers. And should a salesman bring around one of the new food mixers and preparers, he may find her in a receptive mood . . .

"When new inventions for the kitchen make their bow, nobody is better equipped to introduce them to housewives than the electric refrigeration dealer. And nobody will get a better reception . . . Such appliances as electric ranges, dishwashers, and food preparers offer electric refrigeration organizations an opportunity to take other kitchen appliances to their customers and prospects.

"Few sales organizations will have such a valid claim to the giving of genuine service to the public as will the merchandisers of equipment for the handling of food."

Apartment House Selling

Desirability of selling the electric refrigerator, range, and dishwasher as a single unit is especially evident in the apartment house and speculative building fields. One salesman can obtain the order for all three, instead of three different salesmen trying to interest the builder or operator in each of the three appliances, saving time for the builder, money for the distributor. Also the advertising value of an all-electric kitchen has an appeal to real estate operators.

Moreover, the opportunity for going back to satisfied users of electric refrigerators and selling them ranges and dishwashers is indeed excellent. The electric refrigerator has undoubtedly made the rest of the kitchen look out-of-date, just as a new davenport will obsolete the rest of the furniture in a living room. Moreover, the electric refrigerator has probably awakened users to the possibilities of better balanced and more varied menus, of new methods of food preparation, of greater convenience, and of savings which can be gained through systematic quantity purchasing.

Piece-by-Piece Assembly of Kitchen

One laudable feature of the General Electric Kitchen sales plan is that it encourages families to assemble their kitchen piece-by-piece. Housewives understand that sort of procedure. They accumulate their silverware over a period of years, and add to chinaware sets from time to time. Lucky is the bride who can walk into a house completely furnished from attic to basement; most of them have to acquire their house furnishings over a period of years. Building an all-electric kitchen can be made a game, and a game which the entire family will hugely enjoy playing.

Multiple selling is one of the few really important new ideas contributed to the science of specialty selling since John H. Patterson first developed the formula. Thus far it hasn't been made to work. But with so many things in favor of the new G. E. retail merchandising plan—it almost appears as if the cards are stacked—there is plenty of room to hope that the idea should succeed at last.

LETTERS

Davidson Happy

Electric Refrigeration Bureau
Electric Building, Omaha, Nebr.
Feb. 6, 1933.

Editor:

This morning the Feb. 1 copy of ELECTRIC REFRIGERATION NEWS came to my desk, and satisfied my eagerness to see the cut of the Consumers Power Co.'s grand prize winning window, in the Electric Refrigeration Bureau's display contest. It was a most attractive exhibit.

As I read on through the NEWS, I got a most agreeable huge surprise in the double-page spread showing the six other cash prize winners.

These are the first pictures I have seen of the displays, and they were wonderfully good.

I had a letter from my friend Horace Liversidge, vice president of the Phildelphia Electric Co., about his prize, and he is proud as Lucifer over their display and the ability of their artist who prepares their window and other exhibits.

May I say again it was mighty nice of you to cooperate with the bureau so well in our Christmas-time contest.

It is excellent cooperation, and greatly appreciated by all of us who are especially interested in the Electric Refrigeration Bureau's activities.

Yesterday I wrote Mr. G. M. Johnston, president of Universal Cooler Corp., who has been made chairman of the N.E.M.A. refrigeration group, inviting him to become a member of the Electric Refrigeration Bureau executive committee, to succeed Mr. Ruthenburg. I know that Mr. Johnston's counsel will be helpful to the executive committee and the bureau, if he accepts, which I hope he will.

J. E. DAVIDSON,
Chairman, executive committee.

Out of Business?

Cushman-Willis Co.
General Electric Distributor
Cleveland, Ohio
Jan. 16, 1933.

Editor:

I read with interest your list of obsolete refrigeration concerns which appeared in ELECTRIC REFRIGERATION NEWS two weeks ago.

I would like to ask why you did not include the Lorain and the Holmes. Also, is the Welsbach still doing business, and what happened to the electric refrigerator known as the American Beauty?

D. R. CANNON,
Apt. house division.

Answer:

The Welsbach Co. has not officially indicated its withdrawal from the electric refrigeration business.

The Holmes Co. went through a clean liquidation but on account of reports that Holmes units were still being sold, we omitted this name from the list.

The American Beauty refrigerator was made by American Refrigerator Co. of Dayton, and you will find this company included in the obsolete list.

As for the Lorain, we have no record of its manufacturer. If you can tell us the company name, we may be able to give you more information on this subject.—Editor.

Cushman-Willis Co.
General Electric Distributor
Cleveland
Jan. 19, 1933.

Editor:

In answer to your letter of Jan. 16 I will try to be as prompt as you were in answering. Right here I want to say that the ELECTRIC REFRIGERATION NEWS is surely on the job when it comes to supplying the refrigeration trade with plenty of valuable and accurate information, hot from the refrigeration company headquarters. Sometimes we get our information through your paper before any other notice from our own companies.

In regard to the Lorain refrigerator, I am sure it was absorbed by the Apex Co. as was the Wayne.

D. R. CANNON,
Apt. house division.

Better Late Than Never

Electric Refrigeration Bureau
San Diego, Calif.
Feb. 8, 1933.

Editor:

While I have been an interested reader of the NEWS since its inception some years ago, this is my first letter sent for the purpose of expressing appreciation of your efforts to keep the industry acquainted with current happenings.

Better late than never, however, and even though this should have been done five or six years ago, and perhaps many times since, please accept my congratulations; you have a publication that has highly justified its position as the trade paper of the industry.

We in this section of southern California, perhaps because of the fact that we are pretty much off to ourselves, are reaping considerable benefit from our cooperative activities carried on through this bureau. Our organization has officially been in existence a little more than four months, but we believe that our bureau, like your publication, has highly justified its existence—at least results have been most gratifying.

Editors are very busy men we know, but possibly you may find time to scan through some of the weekly Bulletins published for the benefit of the industry in this county. On the chance that this might be the case, a number of extra Bulletins are going forward to you today, under separate wrapper.

You will note (if you read any) that your paper actually does serve as a guiding light on occasion, even though our predictions concerning this territory do not always coincide with yours, which of course is national.

As always, the next issue of the NEWS (which I appropriate from our local utility manager) will be awaited with interest. Having read it so long, its arrival means that other things must be dropped until the issue has been read from cover to cover. In short, I like it!

J. CLARK CHAMBERLAIN,
Secretary-manager.

Who Married the Vanities Girl?

Leonard Refrigerator Co.
14260 Plymouth Road, Detroit
Feb. 11, 1933.

Editor:

In the interest of accuracy and also illustrating how closely your publication is read,—

In your last issue you quoted from Winchell's column a line to the effect that "Florence ('Vanities') Johnson, and Ray Legge, a Rex Cole executive, are honeymooning in the West Indies."

Ed Kelley, sales manager for the ice cream equipment division of the Kelvinator Corp., just barged through the front door of my office with your paper in his hand. He wanted to know who this guy Rex Cole is. (Of course, you understand George that Ed knows.)

Ray Legg (please note there is no "e") is one of Ed Kelley's star salesmen, and one of the top notch salesmen of ice cream equipment in the U. S. A. Winchell is wrong as to his being a member of Rex Cole's official family. And because he is wrong, you are wrong, which of course is no fault of yours. And, after all, what difference does it make?

A. M. TAYLOR,
Merchandising director.

Judson C. Burns Recommends It

Judson C. Burns, Inc.
General Electric Distributor
Walnut at 12th St., Philadelphia
Feb. 9, 1933.

Editor:

I believe it would be very advantageous to all of our dealers to be subscribers and regular readers of ELECTRIC REFRIGERATION NEWS.

I believe that dealers as well as ourselves will be very much interested in knowing what is going on in the refrigeration industry in other parts of the country. They will want to know of the aggressive moves that are being made by other dealers and distributors. They will want advance information on new styles in refrigeration, and just what the industry in its entirety is doing.

I would recommend, as a reader, your valuable publication to all our dealers. I would be very happy indeed to learn that they had all become subscribers.

JUDSON C. BURNS,
President.

For Prospects

Brown Supply Co.
Grunow Distributor
2800 Pine St., St. Louis
Feb. 3, 1933.

Editor.

I am very anxious to have every prospect that we are working on receive the ELECTRIC REFRIGERATION NEWS. I am also very anxious for every Grunow dealer that we appoint to receive ELECTRIC REFRIGERATION NEWS.

F. A. WIEBE,
Vice president.

Engineering News

208 North College St., Palmyra, Pa.
Jan. 4, 1933.

Editor:

I like REFRIGERATION NEWS very well, especially the engineering news and the complete data your paper gave on refrigerators.

I also enjoy the sales and servicing write ups.

OTTO H. SEIDEL.

Interesting

559 Mann Place, Elgin, Ill.

Editor:

Feb. 4, 1933

I have been a reader of your paper for over a year and have found it very interesting and informative.

WALTER HURLBURT.

Charter Member

"I have been a subscriber to ELECTRIC REFRIGERATION NEWS ever since it started and would not be without it."—Carl W. Windel, Springfield, Ohio.

LEONARD ADDS 57 TO FIELD ORGANIZATION

DETROIT—Fifty-seven new dealers, located in 19 states, have been added during the last month to the field organization of the Leonard Refrigerator Co., it was announced by R. I. Petrie, general sales manager.

The new dealers, by states, are:

Arizona — Fannin's Hardware Co., Phoenix.

Arkansas—W. M. Harris & Son, Fayetteville.

Connecticut—S. E. LaPlace, Deep River, and H. M. Bullard Co., New Haven.

Illinois—Home Appliance Co., Moline, and Beverly Thor Shop, 9100 South Ashland Ave., Chicago.

Indiana—Hoosier Coal & Oil Co., 1300 East 30th St., Indianapolis.

Maine—Haskell Implement & Seed Co., Lewiston; A. C. Alfred, Bangor; and Kittery Electrical Co., Kittery.

Maryland—Ristig's Inc., Mt. Rainer.

Massachusetts—Gove Electric Co., 49 Day St., Norwood; La Blanc Music Co., Salem; Home Appliance Co., Hyde Park; Suburban Hardware Co., Needham; and Flesher Furniture Co., Malden.

Michigan—A. E. Corpron, Cass City; Bidwell Radio & Electric Co., Midland; J. C. Howard, Standish; Walter Clabuesch, Pigeon; and Radio & Electric Appliance Co., Ludington.

Missouri—Juden Music Co., Cape Girardeau, and New Market Hardware Co., 4064 Laclede Ave., St. Louis.

Nebraska — Radio Center, North Platte; R. H. Seaman, Broken Bow; and C. J. & H. D. Milstead, Peru.

New Jersey—Sigman Music Shop, 125 Washington St., Hoboken; Hudson Furniture Co., 1144 Elizabeth Ave., Elizabeth; John Etris, Palmyra; and Economy Sales Co., Toms River.

New York—Smith's Garage, Pottersville; New York and Queens Electric Light & Power Co., Bridge Plaza North, Long Island City; Earl B. Feiden, Lathams; Clark's Electric Shop, Pawling; and Wangler Electric Co., 2329 Main St., Buffalo.

Oklahoma—Bud Autry, Marietta.

Oregon—Hull & McNab, Umatilla; Dalton Electric Co., The Dalles, and Holden Bros., 1095 Hawthorne Ave., Portland.

Pennsylvania—Epp Furniture Co., 1307 State St., Erie; H. & L. Electric Co., Greensburg; A. S. Congdon, Sayre; R. F. Smith, Myerstown; J. Rosenfeld Co., Mt. Holly; Jacob Schoffer, Topton; and Scholz Brothers Hardware Co., Pittsburgh.

Texas—East Texas Radio Co., Palestine; Edwards Drug Co., Forney; and Thomas Goggan & Brothers, Waco.

Virginia — Sydenstricker Hardware Co., Clifton Forge; Stull & O'Conner, Covington; Harlow Wilcox & Co., Petersburg; Johnson Longworth Heating Co., Richmond; Traxler Furniture Co., Martinsville; and C. H. Matherly, Farmville.

West Virginia—Kelley's, Fairmont, and Royal Furniture Co., Morgantown.

KELVINATOR TO SPONSOR CAMPAIGN ON DELUXE LINE

DETROIT—During the 1933 season, Kelvinator Corp. will use a special campaign to promote sales of its deluxe models, according to J. S. Sayre, sales manager.

Newspaper, magazine, and billboard advertising will carry the company's "plus value" message, supplementing store and window display pieces.

During the campaign, prospective buyers of deluxe model Kelvinators will be sent letters signed by George W. Mason, president of Kelvinator Corp., bearing a sales presentation stressing quality. Names of prospects for deluxe models will be sent to the factory by the field organization.

A Kelvinator salesman will call on the prospect to continue his sales efforts, after the personal letter from the factory has been received.

Stockholders Approve Sale of Dayton

DAYTON—Stockholders of the Dayton Refrigerator Corp. here have approved the sale of the business by the National Pumps Corp., of which the refrigerator company was a subsidiary, to Heinz and Munschauer, Inc., of Buffalo.

Removal of the business takes effect immediately. The Buffalo concern, which has been making cabinets for the "Dayton" refrigerator, is said to be planning to assemble and distribute a complete refrigerator under this name. Condensing units will be procured from the Dayton Mfg. Co., according to the announcement.

SAN DIEGO LUMBER FIRM TO SELL CROSLEYS

SAN DIEGO, Calif.—Klika Lumber Co. here has signed a franchise as a Crosley refrigeration dealer, according to J. Clark Chamberlain, secretary-manager of the local Electric Refrigeration Bureau.

1,700 Frigidaire Men Share Savings Fund

DAYTON—More than $250,000 in cash was recently distributed between 1,700 employes of the Frigidaire Corp. as settlement of their share of the General Motors' Employes' Savings fund which was started on Jan. 1, 1927, and which matured on Jan 1 of this year.

The sums deposited by the employes were invested and a high interest return was achieved, it was declared.

Factory workers, office employes, and members of the various operating divisions of Frigidaire, including sales, engineering and production, made up the groups of employes participating in the savings fund.

WASHINGTON MEN VISIT KELVINATOR FACTORY

DETROIT—C. M. Lake, Kelvinator factory representative in charge of government business at Washington, D. C., and S. E. Sapp of Barber & Ross, Kelvinator distributor in the national capital, discussed 1933 sales plans with factory officials here last week.

GIBSON OFFICERS RETURN FROM 3 FIELD MEETINGS

GREENVILLE, Mich.—Officials of the Gibson Electric Refrigerator Corp. here have returned to the factory after conducting dealer meetings at three eastern distributorships last week.

Dealer meetings were held at the headquarters of the Capital City Distributing Co., Albany, N. Y.; H. D. MacRae, Inc., Rochester, N. Y.; and Young Bros., Erie, Pa.

Gibson factory men attending the meetings were Frank S. Gibson, Jr., vice president in charge of sales; W. R. Marshall, director of advertising and sales promotion; Herbert E. Young, sales manager of the eastern division; and Elmer F. Born of the engineering staff.

MAJESTIC DISTRIBUTOR FOR DENVER NAMED

CHICAGO—Harry Moll, Inc., of Denver has been appointed distributor for Majestic refrigerators in that territory, according to Charles R. Klopp, field sales manager of Grigsby-Grunow's refrigeration division.

Miss Sparkman Holds Training Schools

MANSFIELD, Ohio—Miss Edna I. Sparkman, supervisor of refrigeration home economics for Westinghouse Electric & Mfg. Co., has recently returned to her offices here after a three weeks sojourn in Pennsylvania where she conducted training courses on the woman buyer's viewpoint and cold cooking for salesmen of the Pennsylvania Power and Light Co.

During the coming year Miss Sparkman will divide her time between the factory and the field, training home economists from branch offices, distributors, and public utilities at the factory, and doing educational work with salesmen in the field.

FORMER G. E. EXECUTIVE DIES IN FLORIDA

SCHENECTADY, N. Y.—Charles F. Patterson, former vice president of the General Electric Co. and former president of the General Electric Supply Corp., died at his home in St. Petersburg, Fla., on Feb. 12, according to information received here.

He joined General Electric in 1909.

BILL TO REPEAL KANSAS MERCHANDISE LAW LOSES

TOPEKA, Kan.—A bill which would have repealed the law prohibiting public utility companies from engaging in the merchandising of appliances and equipment, and which would have permitted them to so operate provided separate accounts were kept of the mercantile and service business, was killed last week in the Kansas State Senate.

A committee in the lower house is still holding hearings on a similar bill which is expected to be reported to that body soon for final decision.

WISCONSIN PLANS BAN ON UTILITY MERCHANDISING

MADISON, Wis. — Fourteen retail trade associations in Wisconsin are said to be backing a bill to be presented to the Wisconsin State Legislature, which would prohibit public utilities from merchandising home appliances. It is estimated that some 50,000 Wisconsin merchants have put their names on petitions and telegrams to be sent to legislators.

This is YOUR

OPPORTUNITY

to get into the

1933

MONEY

● Sparton dealers are on the high road to success this year. . . They have a Franchise which allows them to make money. They have the ALL-Feature refrigerator that is instantly acceptable, for every woman in this entire country finds in Sparton ALL the features and advantages she has always wanted and needed. Each of 8 other refrigerators offer her ONE of the features, all of which she now can get in the Sparton ALL-Feature refrigerator. Then Sparton dealers have a carefully devised, positive selling plan which WORKS . . . **and which brings in live, ready-to-buy prospects.**

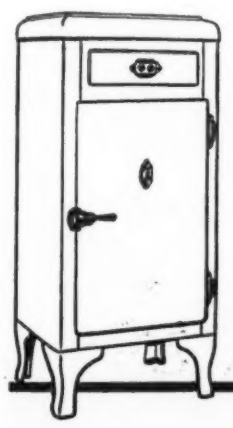
Now is your opportunity to join forces with a company that's going somewhere in 1933. Find out for yourself what Sparton is doing for dealers—and can do for YOU. Write us TODAY. Do it NOW. . . The Sparks-Withington Company, Jackson, Michigan. Sparton of Canada, Ltd., London, Ontario.

SELL THE

SPARTON

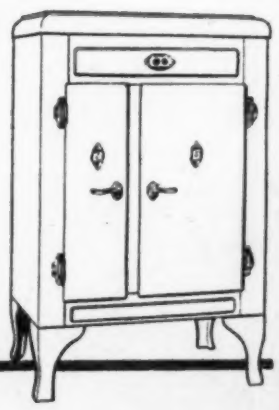
All-Feature

Refrigerator



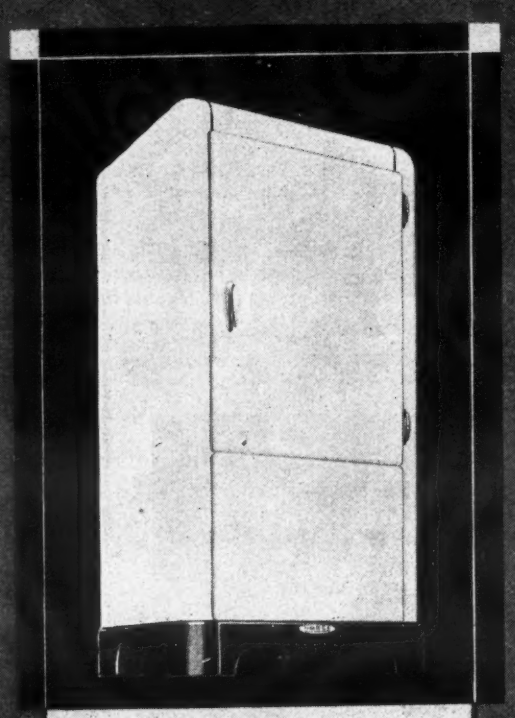
$114.50 F. o. b. factory—TAX INCLUDED

ACT NOW



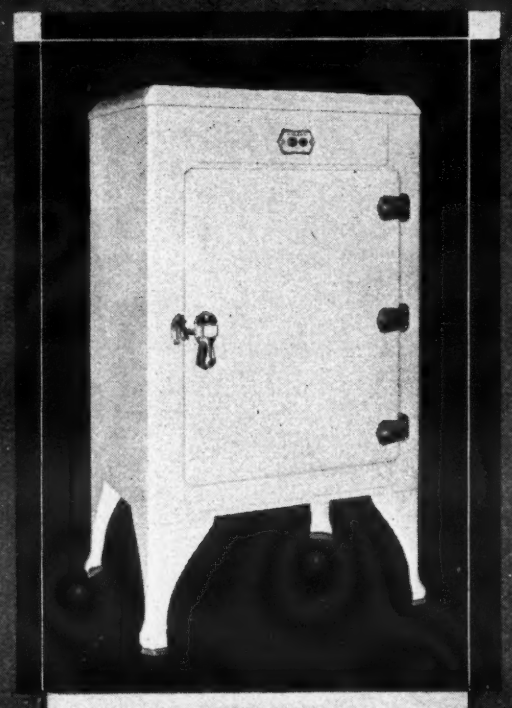
WRITE US

New Household Refrigerator Styles Offere

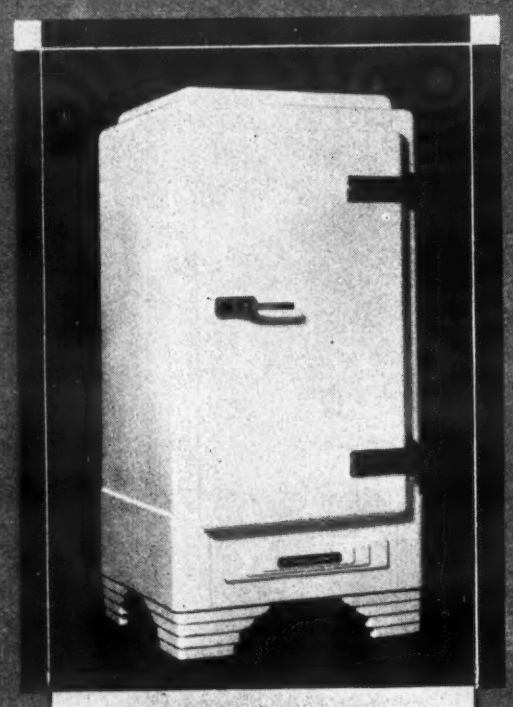


NORGE

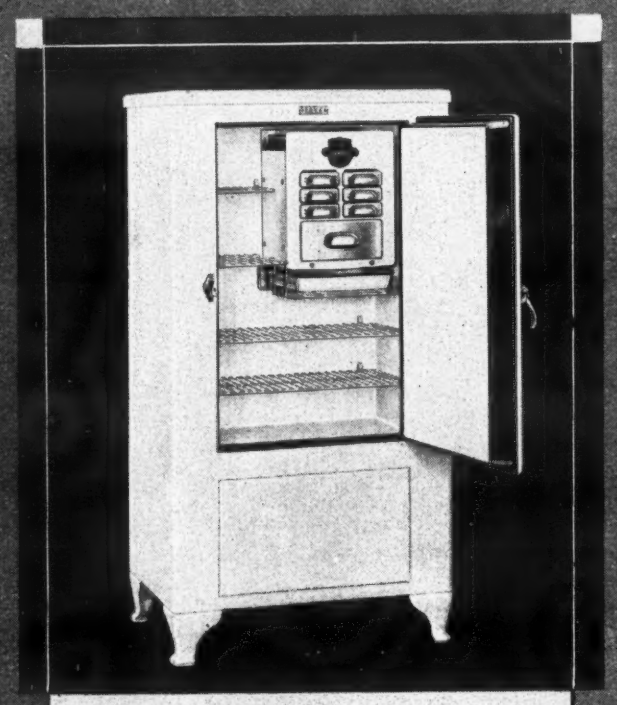
CROSLEY



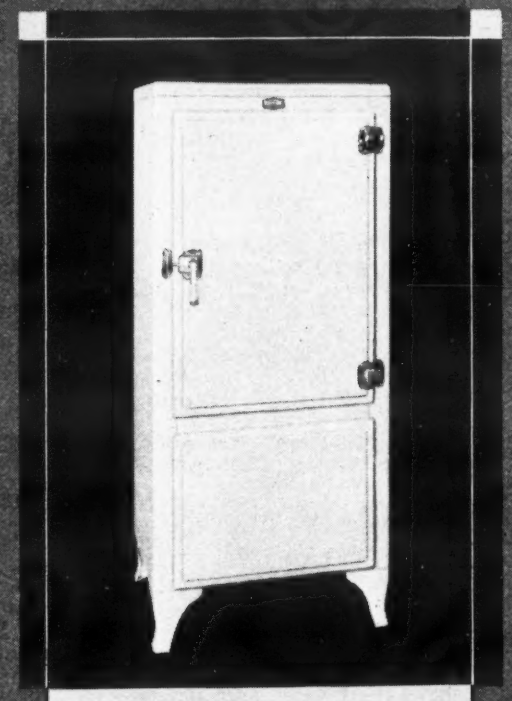
GIBSON



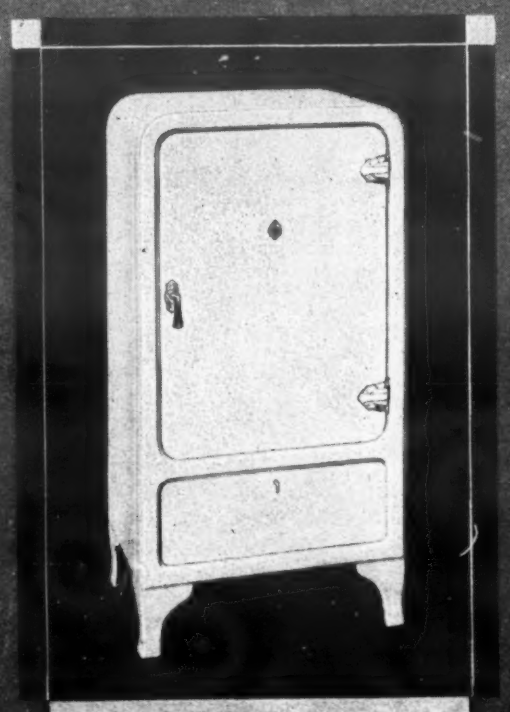
COPELAND



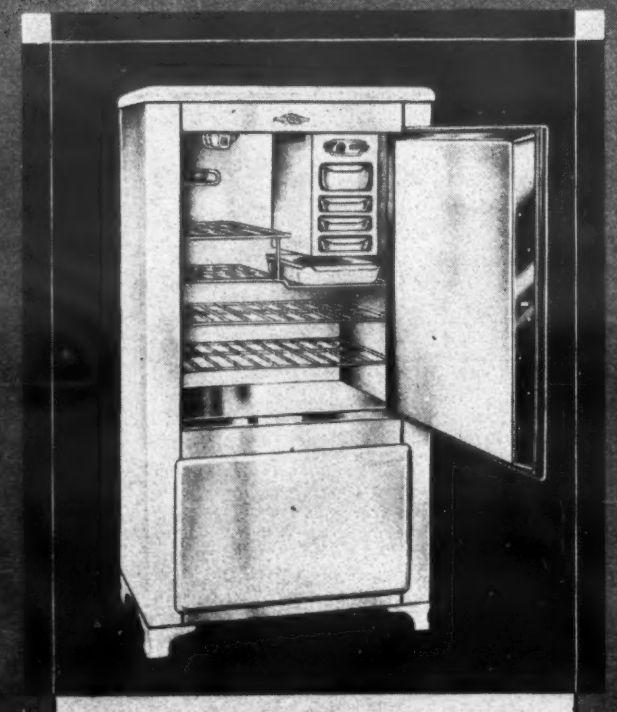
SERVEL



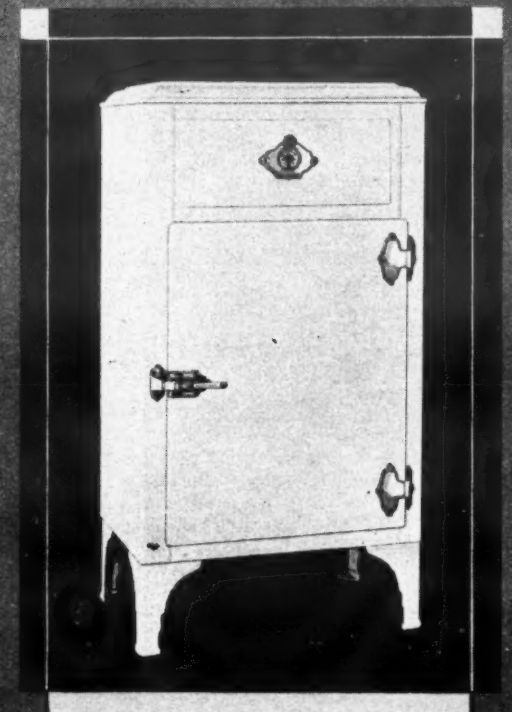
ICE-O-MATIC



GRUNOW

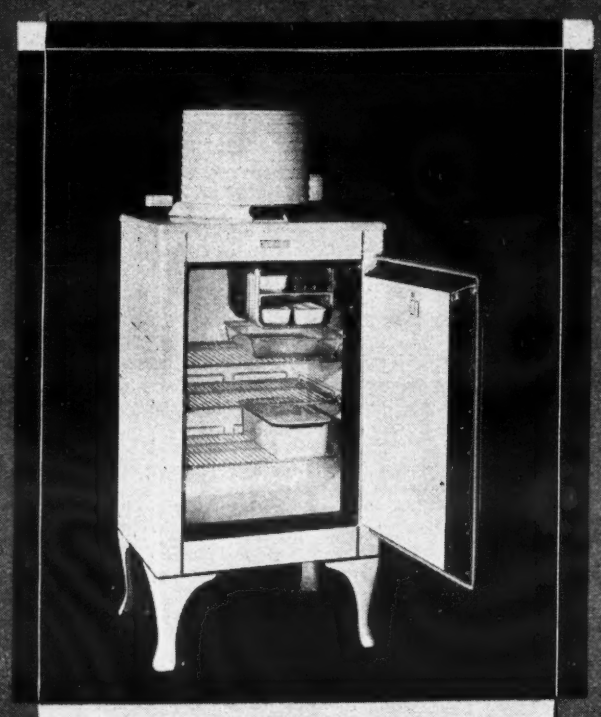


M & E

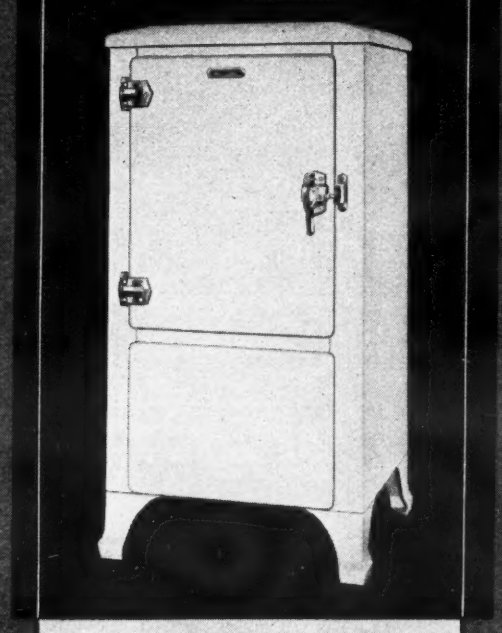


WESTINGHOUSE

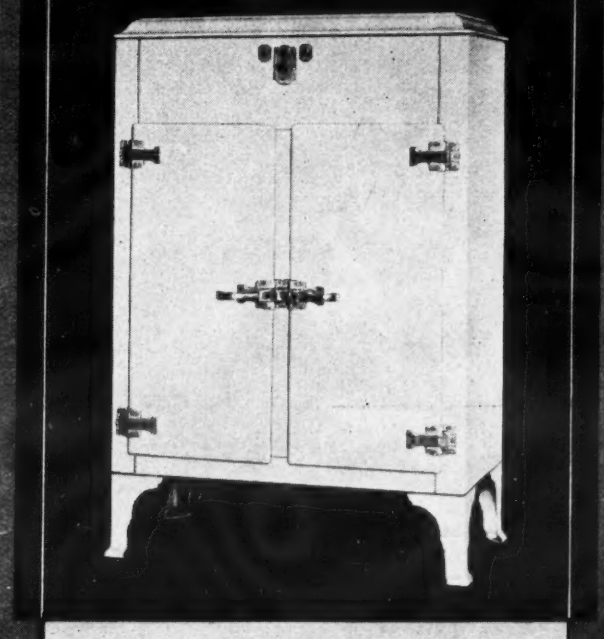
ffered to 1933 Buyers by 18 Manufacturers



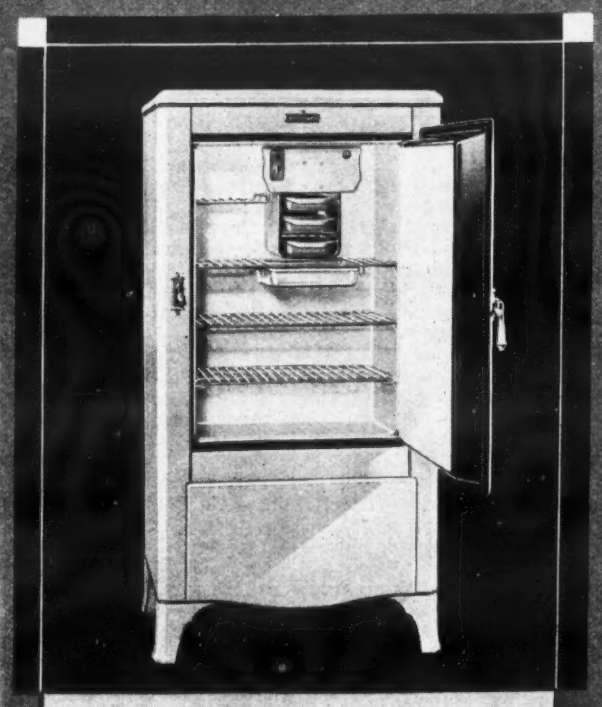
GENERAL ELECTRIC



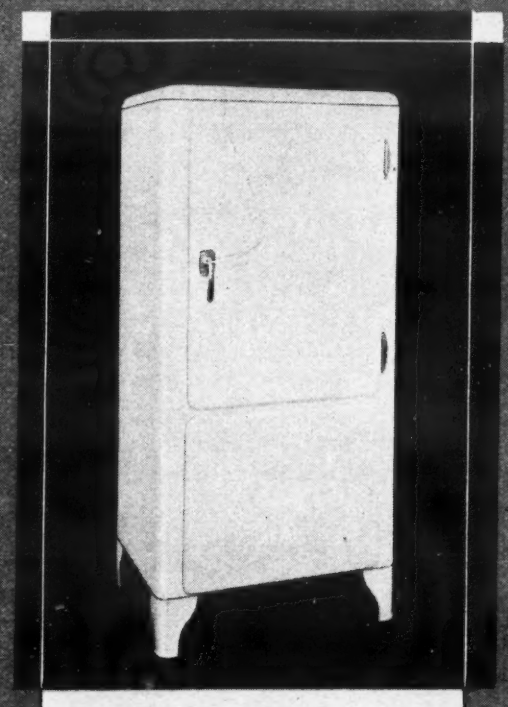
KELVINATOR



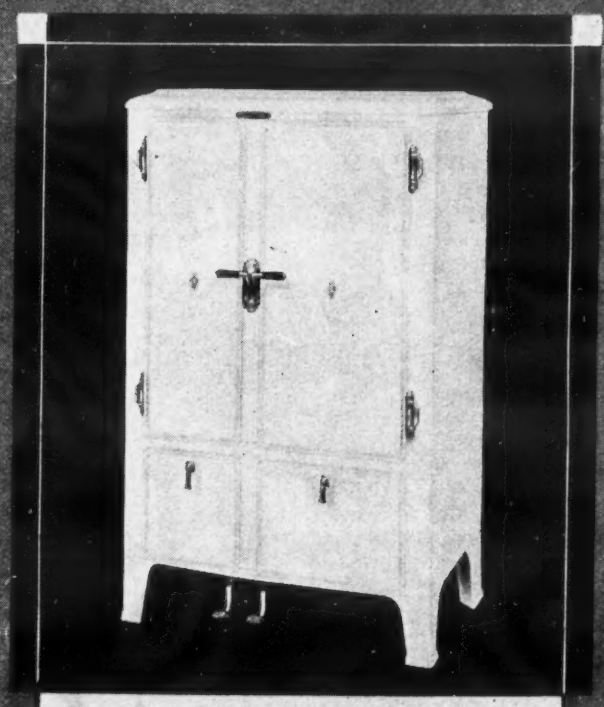
MAJESTIC



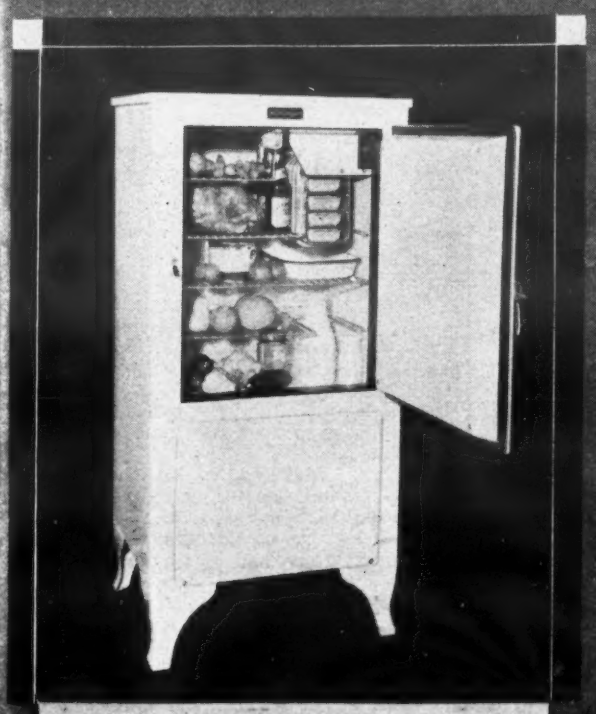
MAYFLOWER



LIBERTY

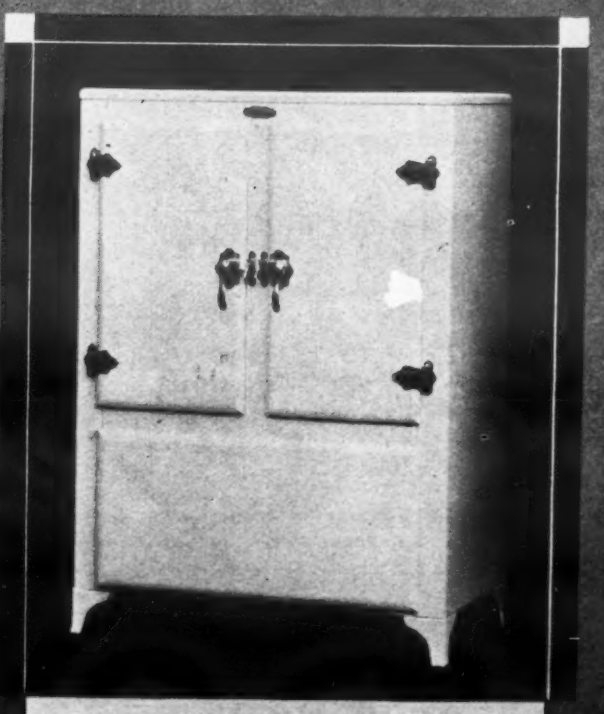


LEONARD



CHALLENGER

JEWETT



STARR FREEZE

NEW EQUIPMENT

A SURVEY OF 1933 HOUSEHOLD MODELS OFFERED BY LEADING MANUFACTURERS

CHALLENGER

Uniflow Mfg. Co.
Erie, Pa.

Interior electric lights and the new defrosting type of temperature control have been incorporated in the four models of Challenger electric refrigerators, made by Uniflow Mfg. Co. Another change this year is the adoption of flooded type evaporators, according to J. C. Bashioum, Uniflow engineer.

Challenger refrigerators use Delco motors, 10-point temperature controls with defrosting positions, porcelain interiors, and lacquer as both interior and exterior finish. Model TS-40 has 4.0 cu. ft. of gross capacity, produces 36 ice cubes, and employs "Ideal" insulation—1½ in. in the bottom and door, 2 in. in sides and back.

TS-45 also makes 36 ice cubes, but has 4.6 cu. ft. of gross capacity, and slightly more shelf area than TS-40. The same kind and amount of insulation is used as in TS-40.

S-45 has 2½ in. of Temlock insulation in the bottom and door, and 2 in. of Temlock in the sides and back. Its gross cubage is 4.6 cu. ft. Model S-60 offers 6.0 cu. ft. of gross storage capacity, 72 ice cubes, and the same insulation as S-45.

COPELAND

Copeland Products, Inc.
Mt. Clemens, Mich.

Copeland Products, Inc., is presenting as its 1933 refrigerator line five models which are so radically changed in cabinet and unit design that they are unlike any Copeland refrigerator made at any time in the past.

The new Copeland cabinet is styled modernistically, in massive lines. Unit of the new refrigerator is so small that it weighs only 74 lbs., with the evaporator, and requires only 5½ oz. of refrigerant.

Because it is so small, the condensing unit is located within the cabinet proper, immediately behind the evaporator. One man can install or remove the new unit in 80 seconds.

Due to the fact that the unit requires so little space, practically all of the cabinet is used for food storage purposes, its door running almost the entire length of the box.

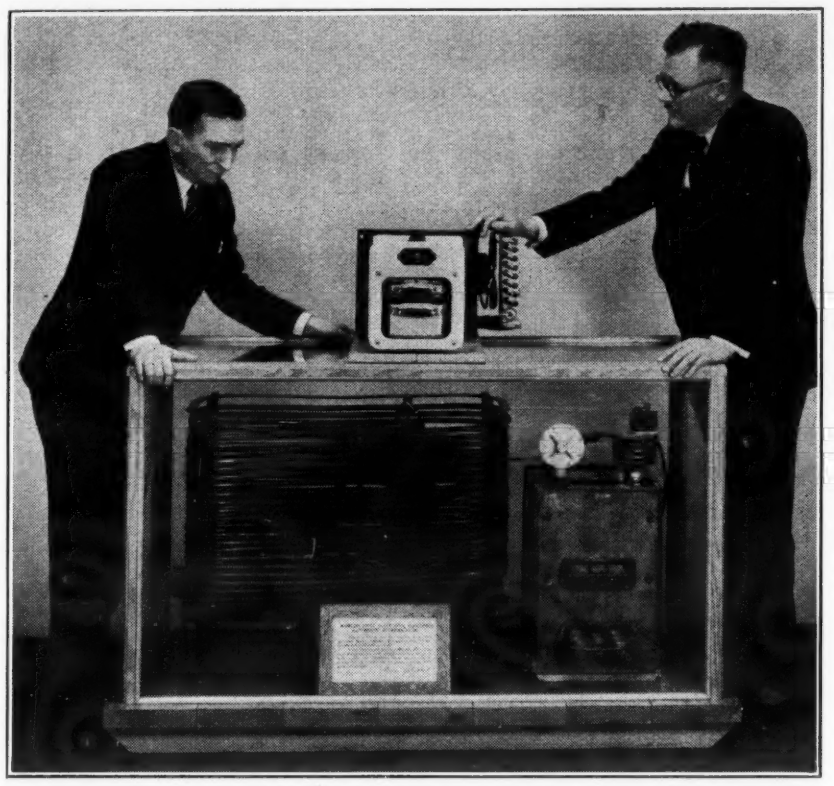
Five models are available, in 4-, 5-, 6-, 7-, and 11-cu. ft. sizes. The two smallest models are furnished in lacquer only, the 6- and 7-cu. ft. models are available in lacquer or porcelain, and the largest, a two-door model having two units, is supplied in porcelain finish only.

In order of their sizes, the model numbers are as follows: W-42, W-52, P-6, P-7, and P-11. Guarantee periods and prices have not been announced.

A feature of the new Copeland is its new automatic defrosting cycle. Motor and compressor are both contained within one housing, the motor being located inside the crankcase. The new unit supplies 101 lbs. of ice-melting effect per 24 hours.

The motor is a 1/6-hp. Delco unit. Detroit Lubricator expansion valve, Penn switch, and Bush condenser are used.

The Old and the New



A study in evolution, by two Copeland vice presidents. W. D. McElhinny (left) and J. R. Replogle compare Copeland's new 74-lb. condensing unit (on top of case) with one of E. J. Copeland's early models (inside case).

CROSLEY

Crosley Radio Corp.
Arlington St., Cincinnati

The Shelvador — refrigerator door equipped with shelves for food storage —is the chief feature of the three-model line which Crosley Radio Corp. will manufacture this year.

A recess in the door permits storage of such foods as butter, eggs, fruits, bacon, and other small-packaged perishables. Outside surface of the door projects slightly beyond the front of the refrigerator door to provide space for the series of shelves on the door's inner side.

Prices on the new Crosley refrigerators are: $95 for the 3½-cu. ft. model; $105 for the 4½-cu. ft. model; and $130 for the 6-cu. ft. model. Capacities given are net Nema. All prices include tax, delivery, and installation costs. Prices are $5 higher west of the Rockies.

New mechanical features of the 1933 Crosley line include a larger evaporator than that used last year, changes in the capillary tube installation, and use of a metal support instead of ply wood at the bottom of the unit.

Delco motors are used in all models. The 6-cu. ft. box is insulated with 3½ in. of Thermocraft, the other two models having 3 in. of Thermocraft. All models are equipped with interior lights.

FRIGIDAIRE

Frigidaire Corp.
Dayton, Ohio

Frigidaire Corp. has not announced its new models for 1933 but is expected to do so within a few weeks.

GENERAL ELECTRIC

General Electric Co.
Electric Refrigeration Department
Cleveland, Ohio

In addition to General Electric's new 10 Star model, announced on page 1 of this issue, the 1933 offering of G. E. refrigerators includes three low-priced General Electric Juniors with conventional compressors, and 12 hermetically sealed Monitor Top models ranging from 4.4 to 17 cu. ft. of capacity.

The three Junior models, E-4, E-5, and HE-7-A have 4, 5, and 7 cu. ft. of capacity, and conventional-type refrigerating systems. They are finished with lacquer exteriors and porcelain interior. Hardware is modernistic in design, made of chrome-finished brass.

Doors are provided with molded rubber replaceable gaskets. Door openings and door edges are faced with black Textolite breaker strips. Evaporators are fabricated of stainless steel.

General Electric Juniors are covered by a one-year guarantee, while the Monitor Tops have a four-year guarantee. A one-year guarantee is placed on all cabinets.

The Monitor Top line is essentially unchanged for 1933, models being available in the following net capacities (expressed in cubic feet): 4.4, 6.7, 8.5, 10.7, 14.6, and 18.2 with Sanak exterior finishes, and 4.4, 6.7, 8.3, 11, 13.4, and 17 cu. ft. models with porcelain exteriors.

All models have single-action door latches, Textolite breaker strips, molded rubber replaceable gaskets, and chrome-finished modernistic hardware. Larger models in the line are equipped with G. E.'s new Du-Flex rubber ice cube trays, double-depth trays, and sliding shelves.

GIBSON

Gibson Electric Refrigerator Corp.
Greenville, Mich.

Hermetically sealed units in all of its electric refrigerators, a two-model line of styled, low-cost refrigerators, and three kerosene-operated absorption units for sale in rural areas comprise the refrigerator line with which Gibson Electric Refrigerator Corp. will make its bid for the 1933 refrigeration market.

Motor and compressor of the new units are enclosed in a cast-iron housing which may be removed for disassembling the condensing unit. The two-cylinder compressor employs a high-side wet-float system. All models are powered by a 1/5-hp. motor, and are equipped with a 12-position Ranco control.

Models L-535 and L-710 are the company's two new models. The first has a net capacity of 5.35 cu. ft., the other, 7.07 cu. ft.

These are streamlined, have flush-fitting and curved-topped doors, are equipped with semi-concealed hardware, have embossed door panels, and are mounted on broom-high legs. Smallest of the two models is priced at $112 f.o.b. factory, tax paid.

In the Gibson "KeroUnit" line of kerosene-operated absorption refrigerators are three models—5 cu. ft., 6½ cu. ft., and 8 cu. ft. in size.

The absorption unit is equipped with a three-burner oil stove. Mechanism of the refrigerator comprises two main parts, the primary system and the burner assembly.

The former is made up of the generator, expansion tube, condenser, receiver, and return tube. Only one heat cycle every 24 hours is required to produce continuous refrigeration, according to C. J. Gibson, president.

Standard Gibson line comprises six models, ranging in size from 5.76 cu. ft. to 14.8 cu. ft. All models of this "H" line are equipped with the "Prestoe" foot pedal door-opener.

Other features of the standard line are adjustable shelves, key-operated lock on the door latch, sliding wire basket for butter and eggs, dome light in the food compartment, 13-in. legs.

Model H-54's net capacity is 5.76 cu. ft. Model H-63 has a net capacity of 6.32 cu. ft. H-77's net capacity is 7.65 cu. ft., and that of model H-82 is 8.15 cu. ft.

Capacity of model H-98 is 9.87 cu. ft., while H-148, largest of the company's regular line has a net capacity of 14.8 cu. ft. The latter model is equipped with 11-in. legs. All "H" models are available in lacquer or porcelain exterior finishes.

GRINNELL

Grinnell Washing Machine Corp.
Grinnell, Iowa

Included in the 1933 line of the Grinnell Washing Machine Corp. are the four models which composed the company's entire 1932 line, and three new models which are being placed on the market this month.

Gross capacities of the three new models are 4.6 cu. ft. for model 46, 5.8 cu. ft. for model 58, and 7.9 cu. ft. for model 79. Net capacities for the four models which comprised the '32 line, and will be continued this year are: model 4E, 4 cu. ft.; model 5E, 4.6 cu. ft.; model 6E, 6.46 cu. ft.; and model 7E, 7.23 cu. ft.

Principal improvements made in the Grinnell unit this year are the adoption of streamline fittings at all joints where flare joints were previously used, use of a new bellows type seal, both elements of which can be replaced without disassembling the machine.

A new positive disc outlet valve has also been adopted for the '33 models. Spring mounting of the unit has been somewhat modified. Units in all Grinnell models are of the conventional type, driven by 1/6-hp. motors.

The factory guarantees both the unit and cabinet of the Grinnell refrigerator for one year.

GRUNOW

Grunow Corp.
4127 George St., Chicago

Distinguishing features of the Grunow electric refrigerators, announced several weeks ago, are streamlined Briggs cabinets and the use of Carrene as a refrigerant, according to Duane Wanamaker, advertising director.

List prices are $127.50 for the 5-cu. ft. model, $157.50 for the 6-cu. ft. model, and $167.50 for the 7-cu. ft. refrigerator.

Carrene has been extensively used as a refrigerant in air-conditioning installations made by Carrier Engineering Corp. in large buildings, and until the announcement that Grunow will use it, engineers had not generally considered it practical for household refrigerators.

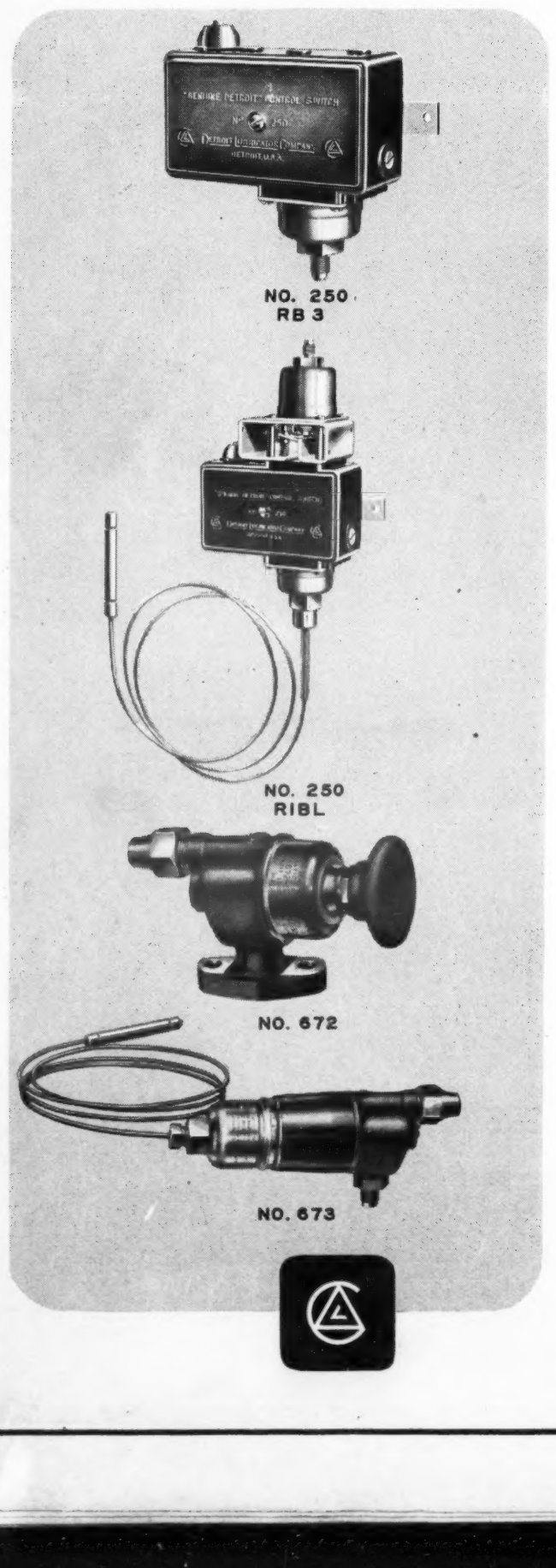
Grunow engineers claim that Carrene is non-explosive, non-toxic, and non-inflammable. Due to the low operating pressures of the gas, the refrigerating system may be opened up for service without appreciable amounts of gas escaping.

Flush doors and rounded corners contribute to the streamline effect of the Grunow cabinet. Bakelite breaker strips are used on both door and jam of the cabinet. "Jewel-box" type hardware is another feature of the cabinet.

The condensing unit has a rotary compressor of conventional type, a McCord finned condenser, and a capacitor motor, direct connected. Cabinet and system are both guaranteed for one year.

(Continued on Page 17, Column 1)

"GENUINE DETROIT" EQUIPMENT



For All Types Refrigeration

No. 250 Control Switch carries 110 to 220 volts up to 1 H.P. Enclosed in neat Bakelite case. Adjustment for Cut-in or Cut-out quickly and easily made. S.A.E. connections regularly supplied.

Model RB-3 for Low Side Pressure Control. Range 20 in. vac. to 40 lbs. Differential 5 lbs. minimum to 25 lbs. maximum.

Model RL-1 for Temperature Control. Range minus 30° to plus 60° or 0° to 60°. Differential 3° minimum to 15° maximum.

Model RIBA Dual Control for Low Side Pressure Control and High Side Cut-out. Range 20 in. vac. to 40 lbs. Differential 5 lbs. minimum to 25 lbs. maximum. High Side Cut-out 125 lbs. to 200 lbs. or 70 lbs. to 130 lbs.

Model RIBL Dual Control for Temperature and High Side Cut-out. Range minus 30° to plus 60° or 0° to 60° Differential 3° minimum to 15° maximum. High Side Cut-out 125 lbs. to 200 lbs. or 70 lbs. to 130 lbs.

The No. 672 Automatic Expansion Valve is designed for single box installations.

The No. 673 Thermostatic Expansion Valve is designed for use with multiple box systems such as apartment houses or commercial installations.

Both these valves can be used with Sulphur Dioxide, Methyl Chloride, Freon (F-12) or any refrigerant not detrimental to brass.

These valves and controls are ACCURATE, RELIABLE AND DURABLE.

Insist on "Genuine Detroit" Products. Write for catalog.

DETROIT LUBRICATOR COMPANY
Trumbull, Lincoln, Marquette & Viaduct
DETROIT, Mich., U. S. A.
Lubricators · Carburetors · Valves
Automatic Controls for temperature, pressure, humidity
Refrigeration, Oil Burner and Heating Accessories.
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

NEW EQUIPMENT

(*Continued from Page 16, Column 5*)

ICE-O-MATIC

Williams Oil-O-Matic Heating Corp.
1201 E. Bell St., Bloomington, Ill.

Added to the Williams Ice-O-Matic line for 1933 are three new conventional-type refrigerators, equipped with the company's "Y" type compressor. Several improvements have been made on this compressor since it was first introduced last year.

Capacity of the compressor used in the "Y" line has been increased to 90 lbs. of ice melting equivalent. Valve design has been changed, and Williams 1/6-hp. capacitor motors have been adopted for use with all compressors. The motors are mounted in rubber. Penn controls are used.

Features of the Williams cabinets are their full-length piano hinges, concealed latches and finger-trip door handles, porcelain shelf supports, and bar-type shelves.

The company has placed a one-year guarantee on both cabinet and system or all models of the '33 line.

Model Y-4 has a net capacity of 4 cu. ft. and is priced at $112.50 (all prices are f.o.b. factory). Y-5's net capacity is 5.3 cu. ft., its price $147.50. The capacity of model Y-6 is 6.4 cu. cu., and its price is $164.50.

Other models with their capacities and prices are: L-41, 4 cu. ft., $147.50; L-53, 5.3 cu. ft., $175; P-53 (porcelain), 5.3 cu. ft., $195; L-64, 6.4 cu. ft.. $200; P-64 (porcelain), 6.4 cu. ft., $220; L-53T, 5.3 cu. ft., $175 (this model's unit is hermetically sealed); L-64T, 6.4 cu. ft., $210 (also hermetic); D-72, 7.2 cu. ft., $275.

Three largest models of the 14-model line are D-90, D-110, and D-150, for which capacities and prices are not available.

JEWETT

Jewett Refrigerator Co.
Letchworth St., Buffalo

In the 1933 line of Jewett Refrigerator Co. are four models—two deluxe and two standard models. They range in price from $119.50 to $600, installed.

Model JK-55, with a net food storage capacity of 4.6 cu. ft. sells for $119.50, and model JK-65, having a net capacity of 5.7 cu. ft., is priced at $149.50.

Features of these models are their adjustable shelves, cadmium breaker strip set in rubber, broom-high legs, porcelain baffle in the evaporator, controlled humidities, and the start-and-stop switch combined with automatic motor protection. Temlock insulation is used.

The compressor is driven by a 1/6-hp. Delco motor, and is equipped with an automatic belt tightener.

Model 80, smallest of the deluxe boxes, has an 8-cu. ft. net capacity, and is priced at $550, installed. Model 100 has a 10-cu. ft. net capacity, and has an installed price of $600.

All models are covered by a one-year guarantee, according to Edgar B. Jewett, president.

KELVINATOR

Kelvinator Corp.
14250 Plymouth Road, Detroit

Keying its sales activity to the appeal "Four Refrigerators in One," Kelvinator has entered the 1933 season with a line of 16 household models.

At special spring showings to be held by Kelvinator distributors and dealers throughout the country, this "Four in One" appeal will be used extensively. Dramatic demonstration of Kelvinator's claim of "world's fastest freezing," and of the new Kelvinator feature of defrosting without interruption of refrigeration, also will mark these spring showings.

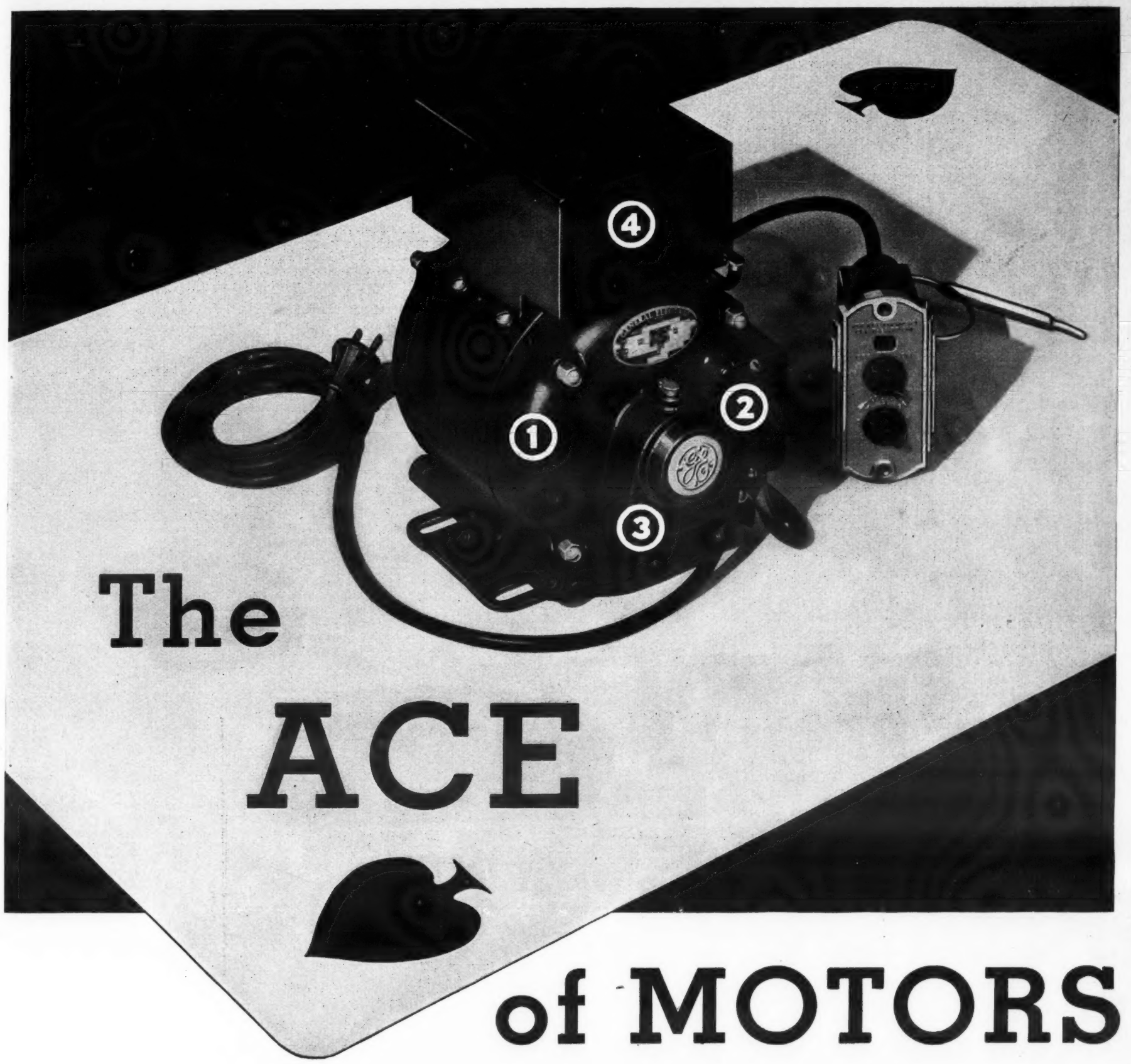
A toggle switch controls this new defrosting device. When this switch is pushed to the defrosting position, the condensing unit operates on a defrosting cycle during which frost will melt from the cooling coil, but ice cubes will remain frozen, and proper temperature will be maintained in the food storage compartment.

Another distinction of 1933 Kelvinators is the absence of a visible temperature selector. The fact that all the 1933 Kelvinator models offer fast freezing without effect on temperatures in the rest of the cabinet, makes unnecessary any manual device to speed freezing of ice cubes, it is claimed.

All of the 1933 Kelvinator household models utilize the high side float type of refrigerant control, in which the flow of refrigerant to the cooling coil is regulated by a float valve in the condensing unit. This system of control, it is pointed out, reduces the possibility of needle valve sticking, eliminates moving parts in the cooling coil, and makes it possible to get at the valve without disturbing the contents of the food compartment.

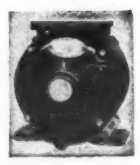
The Kelvinator "K" line has "three-zone cold," with each zone operating independently of the others. Each of the four "K" models has at least one tray devoted to the automatic freezing and one automatic fast-freezing tray besides providing proper food compart-

(*Continued on Page 18, Column 1*)

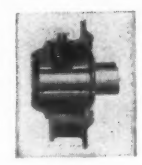


The ACE of MOTORS

Further Improved

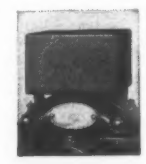


1. DRIP-PROOF END FLANGES
A new feature which improves the appearance and prevents any foreign material from dropping into the motor.



3. OIL CAPACITY DOUBLED
Improved wool-packed bearings contain twice as much oil as before. The oil is held in capillary suspension exactly as water is held in a sponge. This prevents spilling of oil and assures longer bearing-life.

2. SIMPLIFIED CONNECTIONS*
A terminal board in the flange eliminates all necessity for splicing and soldering leads. Three binding posts are provided for direct connection of line and cold-control leads.



4. SMALLER CAPACITOR CASE
As the capacitor unit is one-half as large as before, less space is needed in your refrigerator for the power unit.

THE improved G-E Type KC "care-free" capacitor-motor — pioneered by General Electric as a superior drive for electric refrigerators — is the product of 8 years of experience in designing, manufacturing, and applying capacitor-motors to refrigerators. It has the smallest number of wearing parts. Accurately built in every part, mounted on a resilient spring base, it is inherently quiet. Everything about it spells simplicity, long life, and obvious dependability.

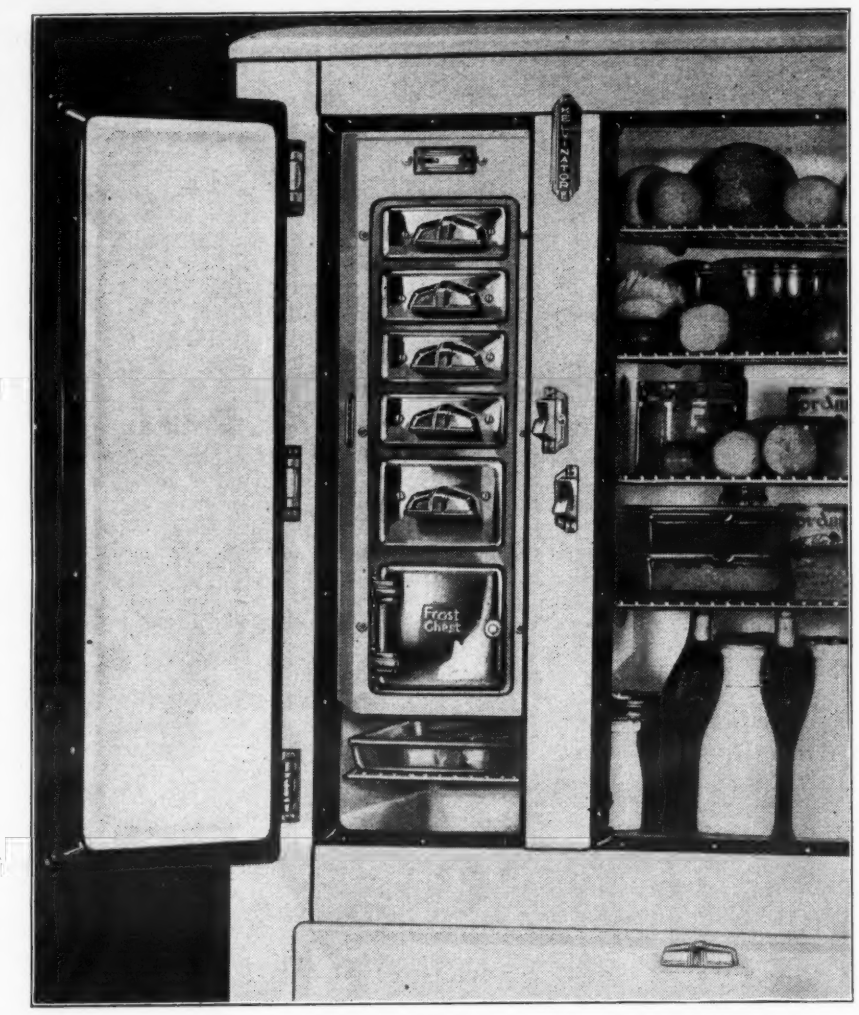
Our motor specialists in a G-E office near you will be glad to supply more detailed information on the Type KC—the Ace of Motors. General Electric Company, Schenectady, New York.

*In addition to our improved Type KC capacitor-motor, the illustration shows a G-E cold-control unit connected to the motor by rubber-covered cable. Note how simply these connections can be made. To insure unit responsibility for the electric equipment of your refrigerator, order G-E control units and cable along with your motors.

210-210

GENERAL ELECTRIC

4-Zone Cold



Kelvinator's four automatic temperatures are 50° F. in the food compartment, freezing in the ice cube trays, sub-freezing storage temperatures in the "Frost Chest," and extra-fast freezing in the Iso-thermic tray.

NEW EQUIPMENT

(*Continued from Page 17, Column 1*)

ment temperature.

The "PK" line of five models offers a double-depth tray providing temperature well under freezing for the storage of ice cubes, fish, desserts, and frozen foods. In addition these "PK" models have porcelain exteriors and interior lighting.

In the "D" line of deluxe household refrigerators are incorporated all Kelvinator features. In this line are three single-door models and two with double doors. They range in size from 5½ to 12 cu. ft. of storage space.

The Iso-thermic fast-freezing tray provides one of the four different temperatures which go to make up the "Four in One." Food storage compartment temperature of below 50° F.; freezing temperatures in the ice cube trays; and below-freezing storage temperature in the Kelvinator Frost Chest are the others. This compartment is intended for the storage of ice cubes when an unusual number of cubes are needed. It also is used as a storage place for frozen foods.

The Kelvinator Kold Keeper, Kelvinator feature since 1914, is incorporated in every "D" model. This is a large tank, containing a solution which is held at an average temperature of 20° F. and provides uniform temperature distribution. In addition, this Kold Keeper acts as an emergency temperature holdover, and helps to maintain refrigeration temperatures for unusually long periods of time after power has been shut off.

Kelvinator hardware on all models is die-cast and quadruple plated with chromium. Ice cube trays are anodically treated, and all tray fronts are chromium plated.

The Kelvinator 1933 line includes the following, listed by model number, and Nema food storage capacities (in cu. ft.): D-120, 12.5; D-90, 9.2; D-75, 7.8; D-65, 6.6; D-55, 5.6; PK-80, 8.2; PK-70, 7.3; PK-60, 6.1; PK-50, 5.1; PK-40, 4.1; K-80, 8.2; K-60, 6.2; K-50, 5.2; K-40, 4.1; R-42, 4.2; and R-64, 6.4.

In addition to these, there are two custom-built deluxe cabinets, one having 15 cu. ft. of storage space and the other 23. The 23-cu. ft. model has three doors while the other has two.

LEONARD

Leonard Refrigerator Co.
14256 Plymouth Road, Detroit

Leonard's door-opening foot pedal, the Len-A-Dor, is the chief feature of the 1933 line of Leonard electric refrigerators, which is composed of 11 models, seven with lacquer-finished exteriors and four with all-porcelain finishes.

Refrigerator doors are opened by foot with the Len-A-Dor.

Another of the features is an arrangement calculated to do away with defrosting difficulties. Known as the "Steady-Kold Defroster," the development makes it possible to maintain ice-keeping and food-preserving temperatures while the process of defrosting is going on.

Appearing also on the control panel, which contains the defrosting switch, is an arrangement which provides automatic protection against overload. Line surges throw an automatic switch out of contact, thus shutting off the motor, safe-guarding the mechanism.

The "Chill-o-meter," located on the same panel as the defrosting control and the overload switch, provides eight different freezing speeds.

Another feature is the spring-hinged, self-closing ice compartment door. By sealing shut the ice compartment, the time required to freeze cubes is reduced, Leonard engineers claim, and food odors that might be absorbed by water in the ice cube trays before freezing are excluded.

In the PL-952, the largest model of the line, is upper door marked "Cold Chest" in the all-porcelain cooling coil assembly. This opens into a compartment designed as a storage space for fish, game, chicken, and other food that is to be kept fresh over a considerable period of time. In each new Leonard, the bottom tray is designed to provide ice in double-quick time. Each ice cube tray is given an anodic finish.

Automatic interior lights are found in all the models of the Leonard line but three—L-424, L-425, and L-641. The interiors of these cabinets are grooved so that the automatic lighting fixture can be quickly installed if the pruchaser desires it.

A space-saver is the new "Dairy Basket," which is an improvement on last year's "Egg Basket." The basket, a wire mesh container, is suspended from the lower shelf and slides out so that its contents are easily accessible.

Another new feature is the telescoping upper shelf which provides additional space for tall bottles and containers. Throughout its entire line, Leonard is using smooth, bar-type shelves. All the shelves rest on black, rubber supports.

Doors of the new line are supported by semi-concealed hinges. Edges of the doors are of black porcelain. resistant against chipping. The doors themselves are trimmed in jet-black "Panelite." Hardware is semi-concealed and chromium plated.

A vegetable bin is found in the L-752 and PL-952, the two-door models, respectively, of the lacquer and the all-porcelain groups. Mounted like an ordinary flour-bin and balanced so that it will stay open when desired, the bin provides storage room for root vegetables.

Model numbers and net (Nema) food storage capacities in cu. ft. follow: L-424 (apartment house model), 4.18; L-425, 4.18; L-641, 6.37; L-451, 4.68; L-551, 5.65; L-651, 6.77; L-752, 7.69; PL-451, 4.68; PL-551, 5.65; PL-751, 7.85; and PL-952, 9.61.

LIBERTY

Liberty Refrigeration Corp.
237 Georgia Ave., Providence, R. I.

Six electric refrigerators with the condensing unit in the top of the cabinet, and six with the machine in the bottom, are offered this year by Liberty Refrigeration Corp. These are finished in lacquer exteriors, while an all-porcelain line is produced in 4.5, 5.5, 6.5, and 8 cu. ft. of storage capacity, with the machine in the bottom.

Net prices to distributors and department stores, quoted f.o.b. factory, range from $49.75 to $150, according to J. H. Readio, general manager of the company. Retail prices are determined by the merchandising outlet.

Net prices are as follows:

With Top-Mounted Unit					
LE-35	LE-40	LP-45	LP-55	LP-65	LP-80
49.75	59.75	69.75	79.75	94.75	114.75
With Bottom-Mounted Unit					
LP-35	LP-40	LP-45	LP-55	LP-65	LP-80
54.00	65.00	76.00	87.00	103.00	124.00
All Porcelain					
		88.00	105.00	125.00	150.00

Top-mounted cabinets have rounded corners, chrome hardware, and broom-high legs. The condensing unit is installed in the top of the cabinet as a self-contained, packaged product, without nuts, screws, or other fastenings. In case of service, the entire unit can be replaced.

The bottom-mounted cabinets have semi-flush doors which close on rubber gaskets. Legs are six inches high.

All-steel cabinets are used for all refrigerators, Mr. Readio states, the exterior being of furniture steel. Shelves are of the flat-wire type, resting on rubber button supporters. Ice cube trays are anodically treated.

Balsam Wool insulation is used, and compressor compartment doors are sound insulated. The methyl chloride condensing unit rests on underslung supports designed to reduce vibration. The temperature control is equipped with an automatic overload start and stop switch, as well as "Colder," "Normal," and "Defrost" positions.

M & E

Merchant & Evans Co.
2035 Washington Ave., Philadelphia

Six standard models are included in the 1933 line of "M & E" household electric refrigerators produced by Merchant & Evans Co., F. E. Wilson, refrigeration sales manager, states. All are covered by a one-year guarantee.

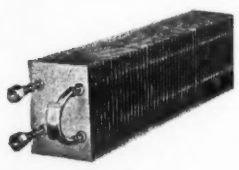
Smallest in the line is model TL-46 with 4 cu. ft. of net (Nema) food storage capacity, finished in lacquer, and offered as a leader model to sell at $98.75 installed.

Other models are the SL-46 with 4-cu. ft. capacity (suggested retail price $112.75); SL-75 with 5-cu. ft. (retail price $127.50); and SL-67 with 6-cu. ft. (priced at $165). In the porcelain line are models SP-57 and SP-83 with 5- and 7-cu. ft. of capacity; respectively,

(*Continued on Page 19, Column 1*)

Coils present ★ *Problems* in Refrigeration - But Larkin Coils *Solve Them*

★ *Excessive Defrosting—*
★ *Excessive Dehydration—*
★ *Excessive Shut Downs—*
★ *High Operating Cost*



Mechanical Refrigeration is always considered in terms of Initial Cost and Upkeep *as against* Service Values Received, and a part of Service Values is in the exact proportion that these problems are *solved.*

The manufacturers listed below offer you this solution for they have adopted LARKIN COILS as Standard Factory Equipment. The *new basic* LARKIN COIL principle was introduced 4 years ago—*today over 38,000 LARKIN COIL equipped units have been installed.*

★ Units so equipped require *less* Defrosting of Coils; *less* shutdowns and *less* raising of temperture of coolers, cases or refrigerators—★ The LARKIN COIL principle *solves* the problem of excessive Dehydration which results in food weight loss, shrinkage and spoilage—

★ LARKIN COILS are so simple in principle and so efficient that they require *little* or *no* adjustment-servicing and where used require *less* constant compressor operation which means *less* running expense. LARKIN COILS require *less* space, leaving more space available for storage and display.

In this day and time when costs, service and efficiency go hand in hand it will pay you to offer your distributors and salesmen every possible selling advantage.

Made in **93** STANDARD SIZES

LARKIN REFRIGERATING CORP'N
Originators and Manufacturers ATLANTA, GA.

Now—Over 38,000 Daily Proving Demonstrations

100% VERTICAL SURFACE

U.S. PATENT No. 1,776,235.

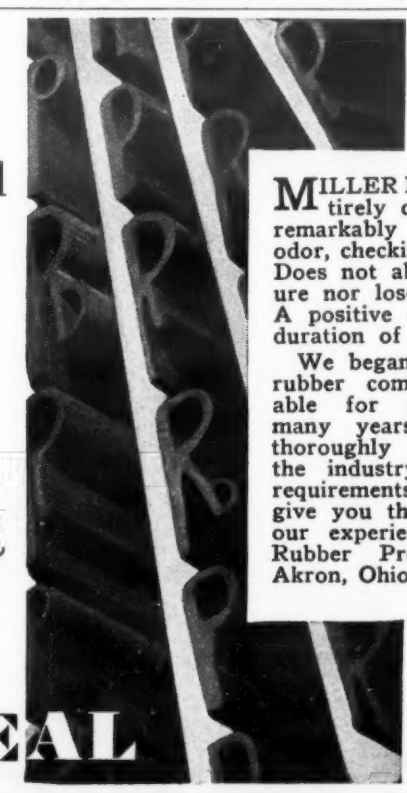
LARKIN COILS

STANDARD FACTORY EQUIPMENT WITH

COPELAND : SERVEL : WILLIAMS ICE-O-MATIC : CARRIER-BRUNSWICK-KROESCHELL
MAYFLOWER : UNIVERSAL : KULAIR : ZEROZONE : M & E : MODERN : STARR
MOWHAWK : APEX : DICELER : H. M. Robins Co., Export *and Others*

Designing a new model ?

let MILLER design the DOORSEAL



MILLER Doorseal, entirely of rubber, is remarkably free from odor, checking, cracking. Does not absorb moisture nor lose its spring. A positive seal for the duration of its life.

We began to develop rubber compound suitable for refrigerators many years ago, and thoroughly understand the industry's exacting requirements. May we give you the benefit of our experience? Miller Rubber Products Co., Akron, Ohio.

NEW EQUIPMENT

(*Continued from Page 18, Column 5*)

and priced for retail sale at $148.25 and $225.

All models have porcelain interiors. Except for the leader model TL-46, all cabinets are made by Seeger, with concealed hinges, sliding shelves, and interior electric lights.

The M & E household compressor operates at 625 r.p.m., and has a bore and stroke of 1½ by 1¼ in. Its capacity is 100 lbs. of ice melting effect per 24 hours in a 90° F. room, according to Mr. Wilson. Sulphur dioxide is the refrigerant used.

MAJESTIC

Grigsby-Grunow Co.
5801 Dickens Ave., Chicago

Chief features of the six new Majestic refrigerators recently announced by Grigsby-Grunow Co. are the "Electro-Sealed" hermetic condensing unit and the "Stay-Kold" defroster. Leader model in this line, however, employs a conventional type of rotary compressor.

"In the 'Electro-Sealed' system," John F. Ditzell, assistant vice president in charge of sales, explains, "the dome which houses the compressor becomes an integral part of the base on which it is mounted. This is done by fusing together the bottom of the dome and the base, after the dome is set in a groove in the base."

The "Stay-Kold" defroster is a control by which ice cubes are kept frozen and temperatures can be maintained in the refrigerator during the defrosting cycle. The "Auto-Reset Protector," another feature, takes the refrigerator off the power lines when voltage fluctuations occur, and starts it up again when normal conditions are again assumed.

Model 450, the "Century," is a low-priced refrigerator with a conventional refrigerating system. It has 4.8 cu. ft. of net food storage capacity, and makes 42 ice cubes in two trays. The cabinet exterior is finished with Elasto, a material which derives its name from the elasticity which is supposed to permit expansion and contraction with the steel on which it is applied. Cabinets are first Bonderized, then given two coats of Elasto.

The deluxe line, with "Electro-Sealed" mechanisms, consists of five models. Model 500 has a net cubage of 4.46, capacity for 42 ice cubes, and 2⅛ in. of insulation.

Model 700 has a net food capacity of 6.1 cu. ft. and 2½ in of insulation. Next larger refrigerator is model 900 with 8.2 cu. ft. of net capacity, 3 in. of insulation, and ice cube production of 105.

Models 500, 700, and 900 are finished outside in Elasto, while the larger models 1200 and 1400 are finished with porcelain exteriors. Model 1200 has 10.28 cu. ft. of net storage capacity, while model 1400 has 12.52 cu. ft. net. In the two large refrigerators, doors have 3½ in. of insulation, walls 2½ in., and top and bottom 3 in.

All Majestic refrigerators have the "Isolator Wall" type of insulation structure, chrome-finished hardware, and stainless porcelain food compartments.

Model 450 is guaranteed for one year, while the deluxe models carry a three-year guarantee.

MAYFLOWER

Trupar Mfg. Co.
140 Davis Ave., Dayton, Ohio

A new 11-cu. ft. model has been added to the Mayflower refrigerators made by the Trupar Mfg. Co. so that Mayflower dealers now have a line ranging from 4.5 to 11 cu. ft. of net Nema capacity. Last year's two-door 7-cu. ft. model has been replaced with a single-door refrigerator of the same capacity.

The new large model, GP-11, finished inside and out with porcelain, has two doors and two evaporators. A total of six ice cube trays offers 168 ice cubes. The cabinet has four inches of insulation, and is powered with a twin-cylinder compressor. Features of the new refrigerator are interior illumination, a foot-pedal door opener for each door, vegetable crisping pan, a water container, and a rubber ice cube tray.

Model G-45, G-5, G-6, and G-7 are finished in lacquer outside, while GP-5, GP-6, and GP-7 have porcelain exteriors as well as porcelain interiors. Except for models G-45 and G-5, all 1933 Mayflowers have interior electric lights and newly designed twin-cylinder compressors.

Other features of the GP-deluxe line are a foot-pedal door opener as well as a conventional hand latch, vegetable crisping pan, rubber ice cube trays, ribbon-type shelves, and porcelain-finished evaporators.

All Mayflower cabinets are of early American period design, and are fitted with period style hardware finished in chrome-satin. All models are covered by a one-year guarantee.

NORGE

Norge Corp.
670 E. Woodbridge St., Detroit

A modernistically styled cabinet and a rollator compressor of refined design are features of Norge Corp.'s 1933 line of electric refrigerators.

Seven new Norge models have streamlined cabinets, with rounded corners and edges, and rest upon bases available in black or white finish.

Two models have cabinets of conventional design, but are equipped with the new rollator. All models are covered by a one-year guarantee.

The new rollator is larger than the '32 model, and has its flywheel surrounded by cooling fins. Cylinder and plate are bolted together without gaskets. The compressor has a 20 per cent increase in capacity.

Circumferential lapping of the seal is used to eliminate cross-scratching and minimize gas leakage. A longer shaft and reduced flywheel overhang are other features of the new unit.

The receiver is larger than that used last year, while the size of the evaporator tubing has been reduced. A tadpole fan is now used instead of the propellor type. The unit is equipped with an automatic belt-tightener.

A solid float is used in the evaporator. Size of the compressor check valve has been decreased, but its opening is larger. New Norge cabinet features are its two-way latch and ribbon-type shelves.

Prices of the Norge line range from approximately $120, installed, to approximately $400. The factory does not set definite prices on its models, but gives only recommended prices to its distributors in various territories.

Model A-44, smallest of the two refrigerators of conventional cabinet design, has a net food storage capacity of 4.4 cu. ft. D-66, the other conventional cabinet model, has a net capacity of 6.62 cu. ft.

Models J (lacquer exterior) and JP (porcelain exterior) are smallest of the styled models, with a net capacity of 5.17 cu. ft. Models K (lacquer exterior) and KP (porcelain exterior) have 6.06-cu. ft. net storage capacities.

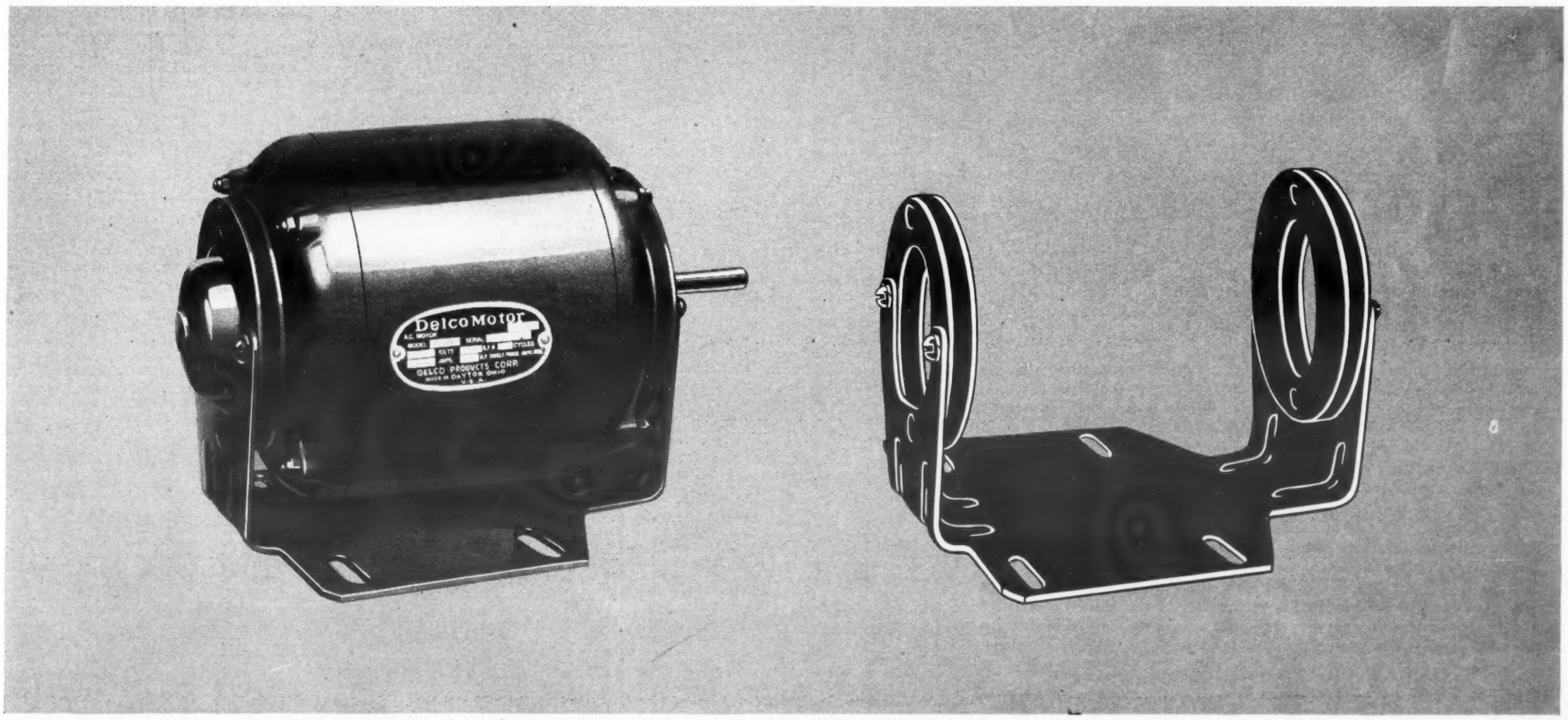
Model M, all porcelain, is 7.14 in net capacity. Model R, all porcelain, has a net capacity of 9.08 cu. ft., and capacity of model W, all porcelain, is 11.05 cu. ft.

(*Concluded on Page 20, Column 3*)

Mary Tries the 'Lazy Latch'

The 1933 Norge can be opened by a push of the arm or elbow, as Mary Thomas demonstrates. A pull on the latch will also open the door.

NOW . . A REFRIGERATOR MOTOR THAT IS FLOATED IN RUBBER*



Here is the latest, and one of the greatest refinements of the electric refrigerator motor—a cradle mounting that successfully *floats* the motor in rubber. The support is at the ends . . . allowing rotative flexibility, but making it impossible for the motor to twist enough to throw the shaft or pulley out of line. The rubber is vulcanized both to the motor ring and to the supports . . . it cannot creep, and oil can't get in to cause deterioration. There is no metal-to-metal contact whatever —vibration and noise are effectively insulated from the mounting. The motor itself, of course, incorporates all the Delco construction advantages that have proved so successful in more than two million electric refrigerators. All Delco motors are individually engineered to fit the exact requirements of the compressor unit in which they are used.

*Patents Pending

DELCO PRODUCTS CORPORATION, DAYTON, OHIO

8 Big Features of the Howell Built-In Capacitor Motor

Compact and neat in appearance. Capacitor built inside motor frame, the newest motor development.

Simplicity of parts. Satisfactory, economical and long-time service with a minimum of attention.

Quiet operation. A big reason why the new Howell motor is ideal for home appliances.

High starting torque. Smooth, quiet starting under any load prescribed by Howell engineers.

High efficiency and power factor and a liberal overload capacity. Real operating economy.

No commutator, no wire-wound rotor—nothing to get out of adjustment on this new motor.

Splash proof. A protected frame guards against entrance of dirt and splashing liquids.

No radio interference. Another reason why the Howell is ideal for home appliances.

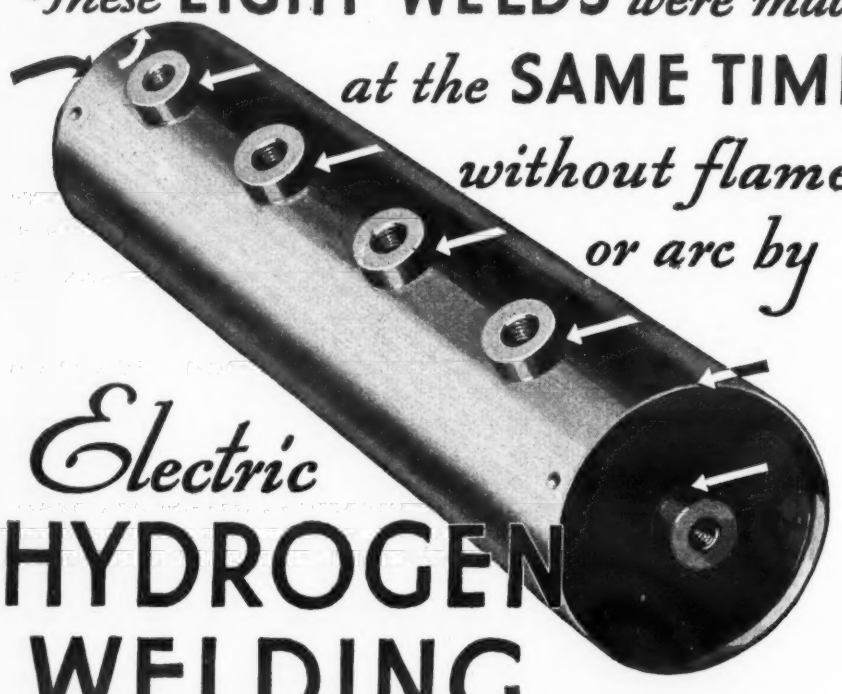
Howell Service is Nation Wide

HOWELL ELECTRIC MOTORS COMPANY have sales and service stations in more than fifty of the largest cities of the United States. From Honolulu to Boston, and from Minneapolis to New Orleans, there are trained Howell men in nearly all of the important cities, ready to give Howell users and prospects any sales information or technical service they may desire.

Howell builds single phase capacitor motors from 1-10 to 40 HP., in all commercial speeds, frequencies and voltages; repulsion induction single phase motors up to 7½ HP., and polyphase motors from 1-10 to 200 HP.

Howell Electric Motors Co.
Howell Michigan
Motor Manufacturers for 18 Years
Howell Sales and Service in over 50 principal cities

These EIGHT WELDS *were made at the* SAME TIME *without flame or arc by*



Electric HYDROGEN WELDING

A length of tubing, two stamped discs, six screw-machine fittings; in one passage through the Bundy Hydrogen-Welding furnace these simple, inexpensive parts have become one solid gas-tight unit. And every one of the eight welds is stronger than the steel itself! Note the trim, clean-cut appearance, light weight, and simplicity of this Hydrogen-Welded assembly. It came from the furnace absolutely clean and free from scale both inside and out. By this quantity-production welding process the most complicated assemblies may be welded at one time; costly castings and forgings may be replaced by inexpensive stampings. Thousands of uses in the refrigeration and allied industries. The illustrated booklet shown below will tell you how you can use the facilities of the Bundy furnace to achieve better appearance, greater strength, lighter weight, and important savings in material and labor. Send for your copy.

Bundyweld Coppered Steel Tubing

Bundyweld double-walled tubing is rolled from strip steel, and Hydrogen-Welded into a solid, continuous, gas-tight structure. Both inside and outside are copper-coated; both absolutely clean and free from scale. I.D. and O.D. are held to limits of .003". Its great strength and resistance to vibration recommend Bundyweld tubing for many applications in the refrigeration industry. Available in sizes of ⅛" to ⅝" O.D., lengths, coils, or completely fabricated. Quotations furnished on blueprint or sample.

BUNDY TUBING COMPANY

BUNDY TUBING COMPANY
4827 Bellevue Ave., Detroit, Mich.
Please send me a copy of your illustrated Hydrogen-Welding booklet.

Name_____
Position_____
Firm_____
City_____

Send for this free book

NEW EQUIPMENT

(Concluded from Page 19, Column 5)

POTTER

Tricold Refrigerator Corp.
296 Delaware Ave., Buffalo

Ranging in price from $167 to $474, installed, five Potter refrigerators employing three-zone cooling are being manufactured by the Tricold Refrigerator Corp., replacing its 1932 line of Chilldare and Tricold refrigerators.

Potter refrigerators have two food storage compartments. In the upper and larger section, a large area finned coil is concealed behind a porcelain shield. This unit holds a constant temperature of 40° F., according to T. Irving Potter, president.

The surface of this coil is proportioned to maintain a proper quantity of moisture in the air of the compartment. Temperature regulator, located behind the panel, is operated by the cabinet temperature.

Below the main food storage compartment is another containing four ice cube trays and space for storing foods which require a relatively low temperature for preservation.

The ice trays rest on a fast freezing shelf which is kept at a temperature of –10° F. by a continuous coil in cast aluminum finned plates. Remainder of the compartment in which the ice trays are located is held at a temperature of 10° F.

Cubic-foot capacity of the Potter refrigerators is not furnished, but shelf areas of the five models and their installed prices are as follows: 9 sq. ft., $167; 10.37 sq. ft., $254; 13.4 sq. ft., $319; 16 sq. ft., $397; and 19.25 sq. ft., $474. Both cabinet and unit are guaranteed for one year.

Aluminum or porcelain shelves are available in the four largest models, while aluminum shelves are standard equipment in the smallest refrigerator. Automatic interior lights are standard equipment on all models.

A single door is used to close both compartments in the three smaller models. Doors are equipped with pressure-release locks.

Cabinets are furnished by Rex, compressors by Universal Cooler, the insulation is Balsam Wool, and Howell capacitor motors are used. All models are available in either lacquer or porcelain exteriors. Penn controls are used.

SERVEL

Servel Sales, Inc.
119 N. Morton St., Evansville, Ind.

Five models of conventional design have been added by Servel Sales, Inc., to its line of hermetic refrigerators for 1933. Servel hermetic models are the same as those manufactured in 1932.

Cabinets of the five new models are similar to those of the Servel hermetic refrigerators, and are finished in pyroxylin. Compressors are of the belt-driven, reciprocating type, and are located below the food storage chamber. One-sixth-hp. motors are used in all of the conventional units.

Refrigerating capacity of all models is 125 lbs. of ice-melting effect in 24 hours. Methyl chloride is the refrigerant used. Both unit and cabinet are covered by a one-year guarantee.

Model CD-46, smallest and lowest priced of the new "companion" line, has a 4.6-cu. ft. net food storage capacity, and sells for $112 (installed, plus freight). Model CD-51, with a 5.1-cu. ft. capacity, will retail for $137.

Third model, CD-61, is a 6.1-cu. ft. box priced at $150; and model CD-71, having a 7.1-cu. ft. storage capacity, sells for $180.50. Model CD-86 is an 8.6-cu. ft. refrigerator retailing for $235.

No major engineering changes have been made in the '33 line of hermetic refrigerators. The unit, in the bottom of the cabinet, is of the reciprocating, direct-drive type, using methyl chloride as the refrigerant.

Motors of ⅛-hp. capacity are used on all models up to the 7-cu. ft. size, and 1/6-hp. motors are used on all larger models. The condenser is air cooled by a forced natural draft.

All units in the hermetic line carry a two-year factory guarantee, while the cabinets are covered by a one-year warranty.

All-porcelain models of the hermetic line, their net capacities, and their prices (f.o.b. factory list) are as follows: SBP-5B, 4.4 cu. ft., $184.50; SCP-6, 5 cu. ft., $217; SBP-7, 6.3 cu. ft., $270.

Other models with their net capacities and prices are: SC-3C, 3.2 cu. ft., $139.50; SB-3A, 3 cu. ft., $139.50; SB-4, 3.8 cu. ft., $159.50; SB-5B, 4.4 cu. ft., $169.50; SC-6, 5 cu. ft., $199.50; SB-7, 6.3 cu. ft., $250; SB-9, 8.8 cu. ft., $340; SB-11, 10.6 cu. ft., $395; and SB-14, 13.9 cu. ft., $460.

STARR FREEZE

Starr Co.
Richmond, Ind.

Starr Co. has enlarged its 1933 line of Starr Freeze household refrigerators to include eight models, ranging in size from 2.75 cu. ft. to 12.1 net cut. ft., with f.o.b. prices starting at $89.50, tax included.

Models and their respective net food storage capacities follow: model T, 2.75 cu. ft.; model R, 3.89 cu. ft.; model W, 3.75 cu. ft.; model M, 5.86 cu. ft.; model Q, 7.18 cu. ft.; model P, 4.82 cu. ft.; model F, 8.9 cu. ft.; model G, 12.1 cu. ft.

All units are covered by a one-year guarantee, with one- and two-year guarantee extensions available by special arrangement.

The company's 1933 commercial line includes cabinets ranging up to 120 cu. ft. in net storage capacity, with several custom-built cabinets being available for hotels, restaurants, etc.

Starr Co. is also manufacturing a line of display cases, bottle coolers, and water coolers. Its '33 line of condensing units for household and commercial application included more than 40 models, the largest of which furnishes 3 tons of refrigeration per 24 hours.

The Starr line of condensing units comprises models of both the water-cooled and air-cooled types, using either methyl chloride or sulphur dioxide as the refrigerant.

U. S. HERMETIC

United States Radio & Television Corp.
Marion, Ind.

With a base price of $99.50 (f.o.b. factory), a line of six U. S. hermetic models will comprise the 1933 offering of the United States Radio & Television Corp.

Models HL-4 and HP-4 have net food storage capacities of 4 cu. ft. Models HL-5 and HP-5 have capacities of 5 cu. ft. net, and models HL-6 and HP-6 have net capacities of 6 cu. ft. All "L" models are finished in lacquer on the exterior. All "P" models have porcelain exteriors.

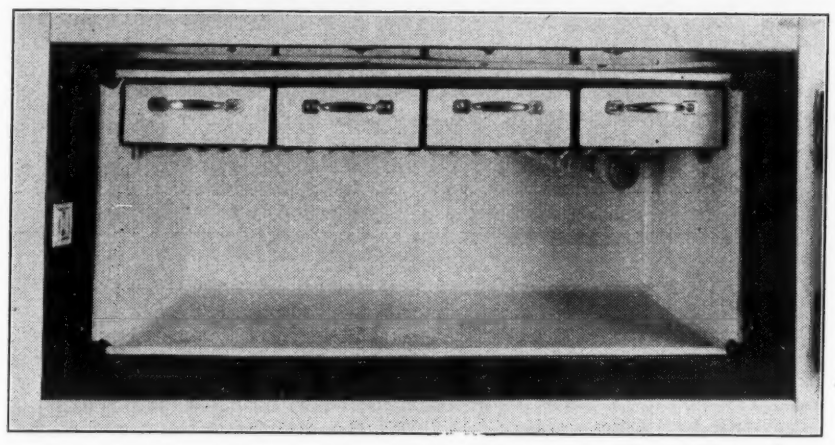
The 4-cu. ft. models have a shelf area of 7.9 sq. ft. The 5-cu. ft. refrigerators have a 10.1-sq. ft. shelf area, and the largest models have a shelf area of 11.5 sq. ft.

Compressor in the U. S. hermetic refrigerator is located above the food chamber, and is of the reciprocating type. Hermetically sealed, system employs a high-side float and a flooded evaporator.

A 1/8-hp. Delco capacitor motor powers the compressor in all units, and Ranco temperature control is used. Sulphur dioxide is the refrigerant. The evaporator is finished in porcelain. Cabinet and unit are covered by a one-year factory guarantee.

Thermocell insulation is used in the cabinets, which are manufactured by Rex. Features of the cabinets are interior lights on the two larger models, with rubber ice trays, vegetable trays, and water coolers offered as optional equipment at extra cost.

Cold Storage Compartment



Lower compartment of the Potter electric refrigerator, producing a temperature low enough for storage of frozen foods, desserts, etc., and the manufacture of ice cubes.

WESTINGHOUSE

Westinghouse Electric & Mfg. Co.
Mansfield, Ohio

Nine models comprise the Westinghouse line of electric refrigerators for 1933, all covered by a four-year guarantee on the refrigerating system and a one-year guarantee on the cabinet.

Model numbers, prices delivered and installed in the eastern territory, and the net content by Nema rating, are as follows: AL-45, $129, 4.2 cu. ft.; AL-60, $184, 6.1 cu. ft.; AL-73, $194, 7.2 cu. ft.; AP-45, $149, 6.2 cu. ft.; AP-73, $224, 7.2 cu. ft.; AP-90, $369, 9.0 cu. ft.; AP-130, $449, 13.5 cu. ft.; and AP-200, $589, 20.1 cu. ft. Prices are slightly higher in southern and western zones, Westinghouse executives state.

Models prefixed AL in the above listing are finished with lacquer exteriors, while AP models are porcelain inside and out.

Chief feature of the Westinghouse hermetic refrigerating system is its "Built-in Watchman" control, a safety device employing a Spencer thermostatic disc to take the motor out of circuit when unusual voltage conditions arise, and to start the system when line voltage resumes normalcy.

Other features are the Westinghouse 7-point temperature selector, buffet top, flat-ribbon shelves, all-steel cabinets, stainless metal freezing trays, and in the deluxe models, electrically lighted interiors, built-in crisping pans, and rolling shelves.

ZEROZONE

Zerozone Corp.
939 E. 95th St., Chicago

Two lines, one ranging in price from $89.50 to $134.50, installed, the other ranging from $99.50 to $179.50, comprise the 1933 offering of Zerozone Corp.

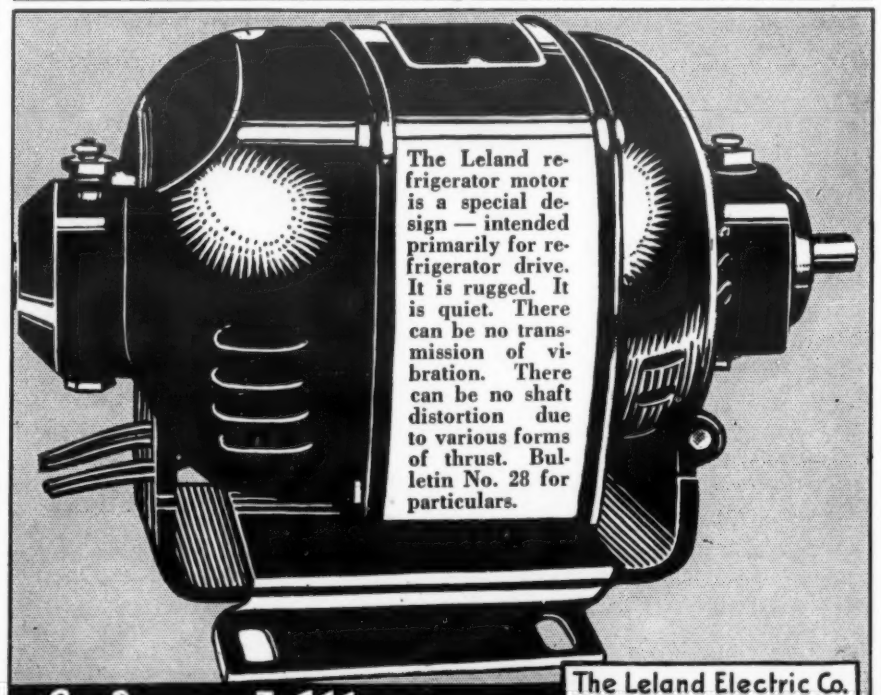
First of the two lines is the company's "leader" line, according to Arthur Richland of Zerozone Corp. It is composed of three models of 4-, 5-, and 6-cu. ft. net capacities.

The standard line is made up of four models, of 4-, 5-, 6-, and 7-cu. ft. net capacities. All models of both lines are covered by a one-year guarantee on replacement of parts.

Zerozone officials state that either the leader or the standard line may be sold as private brand merchandise at any price set by the retailer, but when either of the lines is sold under the Zerozone brand name, official Zerozone prices must be maintained.

Model numbers, capacities, and prices of the leader line follows: model 55, 4 cu. ft., $89.50; model 66, 5 cu. ft., $109.50; model 77, 6 cu. ft., $134.50.

Following is the same information for the company's 1933 standard line: model 505, 4 cu. ft., $99.50; model 606, 5 cu. ft., $124.50; model 707, 6 cu. ft., $144.50; model 808, 7 cu. ft., $179.50.


The Leland refrigerator motor is a special design — intended primarily for refrigerator drive. It is rugged. It is quiet. There can be no transmission of vibration. There can be no shaft distortion due to various forms of thrust. Bulletin No. 28 for particulars.

Leland Motors
The Leland Electric Co.
Dayton · Ohio · U.S.A.
CANADIAN ADDRESS TORONTO CABLE ADDRESS LELECT

ENGINEERING

APPLIANCE MOTOR IS SELF-PROTECTING

(*Concluded from Page 1, Column 1*)

as possible regardless of service conditions, but removes it from the line when the temperature approaches a damaging value.

The thermostat's operation depends upon a combination of the actual motor frame temperature and the line current through the motor. At each load up to the pull-out point of the motor, there is a definite length of time required for the motor to reach the temperature which causes the thermostat to open its contacts removing the motor from the line, Westinghouse engineers explain.

Thermostat on Motor

The higher the overload the sooner the motor disconnects itself. The motor even takes into account different ambient temperatures, carrying a given overload longer in a cold room than in a hot one.

The thermostat has but one moving part, consisting of a circular bimetallic disc, which buckles at definite temperatures, opening a multiplicity of contacts at a predetermined temperature and closing them when the disc cools down. This action occurs when the disc itself reaches its operating temperature, regardless of how the heat is supplied.

During laboratory tests up to the first of the year, a standard 110-volt single-phase, 60-cycle split-phase motor was connected to the line for 840 hours, representing about 46,200 operations of the thermostat.

The current was on an average of about 4 seconds, and off 62 seconds. A ¼-hp. motor was tested similarly day and night for 75 days, without damage.

650% Overload

With its rotor locked, this 1/6-hp. Westinghouse domestic motor has been drawing 18 amperes (650 per cent overload) for weeks without harm to the motor. The explanation lies in a small disc thermostat fastened to the motor frame which opens the circuit when the motor gets too hot, and connects it again after it has cooled.

NEW YORK CHEMISTS WILL HEAR POWELL

NEW YORK CITY—Sheppard T. Powell, consulting chemical engineer of Baltimore, will address the Society of Chemical Industry on "The Creation and Correction of Trade Waste Problems" at 8:15 p. m. Friday night, Feb. 24, at the Chemists' club here. A. E. Marshall will be chairman of the meeting. Mr. Powell will present a critical survey of economic losses resulting from industrial activity, with a discussion of the impracticability and inadequacy of current thought.

Norge Establishes Evaporator Dept.

By Elston D. Herron

MUSKEGON, Mich.—Establishment of a department for manufacturing evaporators in the assembly and cabinet plant of Norge Corp. here has just been completed, and several improvement and rerouting projects in the plant's production lines have been carried out, according to H. M. Morley, in charge of operations at the Muskegon plant.

The evaporator division has been installed in a part of the plant formerly used for warehouse purposes, and occupies an area of 18,000 sq. ft. Space of the same area is still available for warehousing.

Reduction of the warehouse area will in no way cramp the plant's ability to supply large numbers of refrigerators on short notice, says Mr. Morley, as improvements made in the plant's production facilities have stepped up its possible production to 1,500 refrigerators per 24 hours, making large warehouse quarters unnecessary.

Crating Equipment Moved

Equipment used for crating, formerly in a separate department, has been moved to the warehouse. Finished refrigerators now pass directly from the assembly and inspection departments to the warehouse, where they are crated and stored.

Combination of the crating and warehouse quarters eliminates much of the labor formerly required in moving the crated units to the warehouse in a separate operation, the plant supervisor points out.

All woodworking equipment, until recently arranged in zigzag fashion, has been placed in a straight line to speed production.

Gravity Conveyors

Gravity conveyors have been installed in the unit sub-assembly department, and workers are now placed at greater distance from each other. All lifting and carrying of materials have been eliminated in this division.

Conveyors in the cabinet division have been lengthened to eliminate congestion of cabinets and workers, as the former come down from the floor above, says Mr. Morley.

Another reason for lengthening the conveyor system in this department was the fact that new and separate operations are now required along the production line to install the concealed lock being used in all cabinets of the Norge 1933 standard line.

Just installed in the plant is a device for checking, out of production, the sulphur dioxide and oil charges placed in the units, even though the charging boards indicate that the two substances are up to factory requirements.

Lacquer Air Pressure

Checks with this device are made approximately 15 times per day, according to Mr. Morley.

New equipment has also been installed to supply a balanced air pressure in the lacquer rooms. It provides for a 32,000 cu. ft. per minute intake in each of the lacquer rooms, and a 27,000 cu. ft. per minute exhaust. The air is cleaned and purified before being passed into the rooms.

A new service division—described by Mr. Morley as a small factory within itself—has been installed to handle all types of servicing on refrigerator cabinets or units returned to the plant.

Formerly, service was made in various departments of the plant, depending upon the nature of the service required. Henceforth, all servicing will be conducted in the new department.

Norge's new product, the Economaid washer, is being manufactured in that part of the plant formerly devoted to manufacture of cabinet stools and tops.

TEST DRILLING MADE TO LOCATE CO-2 GAS

NILAND, Calif.—Test drilling has been started in the mud-volcano district between Niland and the Salton Sea to determine the quantity of carbon dioxide gas available in the beds underlying a 10,000-acre section of this area, according to reports.

Exploitation of this district is being conducted by a closed syndicate headed by Carl M. Einhart, former president of the Southwestern Public Service Co.

Mr. Einhart reports that a $100,000 plant for manufacturing solid CO_2 will be erected near Niland, if the drillings indicate that the carbon dioxide is available in quantities sufficient to justify the expenditure.

Until recently, it was believed that the gas arising from mud pots in this vicinity in Imperial Valley was merely hot air or steam. In May, however, analysis of the gas was made under the direction of Robert Hayes, manager of El Ventro's chamber of commerce.

Analysis revealed that the gas was 97.2 carbon dioxide, .5 per cent oxygen, and 2.3 per cent nitrogen.

Mr. Einhart, with A. F. Holt, former Pasadena banker, and C. A. Winder, consulting engineer, immediately formed their closed syndicate for investigation of the gas reservoirs, and leased a 7,000-acre tract in the heart of the gas field.

Mr. Einhart states that if the solid CO_2 plant is opened, it will employ 15 men and will start with a daily output of 10 tons. Output will eventually be increased to 50 tons daily, he believes.

Steam for operating compressors in the plant will be piped from a cavity near the carbon dioxide deposits, and 612 feet below the surface, Engineer Winder says.

Possibility is slight that drillers will be hindered by tapping water supplies in or near the carbon dioxide beds, explains Mr. Einhart, because it has been found that "there is a natural rock dike rooted hundreds of feet below the surface that locks the Salton Sea seepage out of the carbon dioxide field."

Low cost of producing the solid CO_2 will enable the product to compete directly in price with water ice in this area, Mr. Einhart declares.

Syndicate members believe that the Imperial Valley agricultural district, near the carbon dioxide deposits, will, with its $38,000,000 annual output of perishable fruits, furnish a ready market for solid CO_2 produced by the company.

Only four other natural CO_2 wells are known to exist in this country, according to Mr. Einhart. They are located at Salt Lake City, Utah; Albuquerque, N. M.; North Park, Colo.; and Tampico, Mex.

To Make Solid CO-2

LONGBEACH, Calif.—Pacific Carbonic Ice Co. has been organized here, and will erect a $300,000 plant to manufacture solid CO_2 from refuse gases given off by stacks at the Terminal Island plant of the Southern California Edison Co.

GENERAL ELECTRIC FORMS MOTOR, GENERATOR DEPT.

SCHENECTADY, N. Y.—A new department of the Schenectady works of the General Electric Co., to be known as the motor and generator engineering department, has recently been formed, according to B. L. Delack, manager of the Schenectady works.

The new department will take over all the activities of the former alternating current and direct current engineering departments.

Earle S. Henningsen has been appointed engineer in charge of this department. Other appointments in the new division are: J. L. Burnham as designing engineer; I. A. Terry as assistant engineer; and A. P. Wood as consulting mechanical engineer.

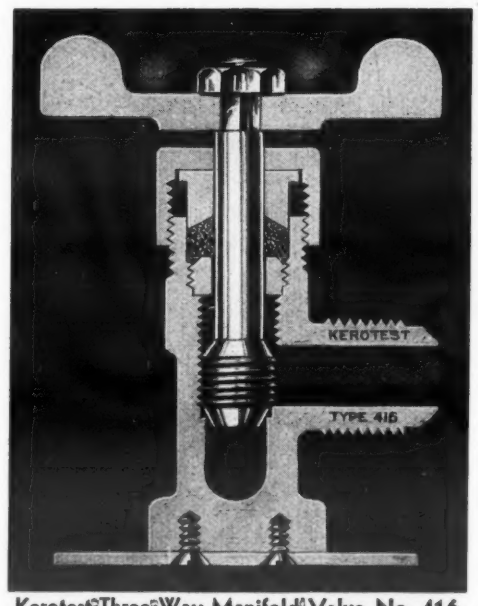
20 Engineering Groups To Meet at Fair

CHICAGO—Twenty national engineering societies will participate in the huge conference of engineers to be held June 25 to 30 under the sponsorship of the Century of Progress, it is reported.

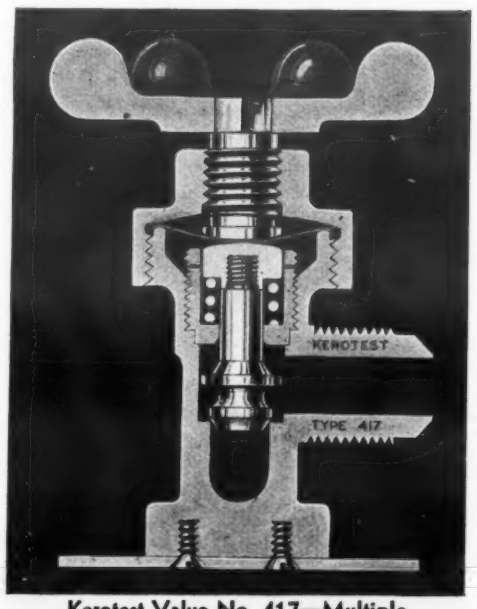
Concurrent with the "Engineering Week" meetings will be the Sixth Midwestern Engineering and Power Exposition, to be held in Chicago's Coliseum.

At this exposition, 300 manufacturers will exhibit refrigeration equipment, air-conditioning and ventilating apparatus, steam generators, etc.

K·E·R·O·T·E·S·T spells safety...strength...long life... absolute dependability in BRASS VALVES, MANIFOLDS and FITTINGS for mechanical refrigeration service



Kerotest Three Way Manifold Valve No. 416 Back Seating Type



Kerotest Valve No. 417—Multiple Diaphragm Type

No matter what your preferences or requirements may be in valves or fittings, there's a Kerotest to meet the exact need. For example, for those who require a Packed Valve with a metal to metal back seat, there's the Kerotest 3 Way Packed Manifold Valve illustrated at left.

Features of this valve are the special Kerotest Pressure Test of every valve before being packed and the easy replacement of the packing in full open position without interruption of service or loss of refrigerant.

Kerotest also makes a full line of Diaphragm Packless Valves as illustrated by Type 417. Assembled without soldered joints, the back-seating bushing of this type also makes possible the replacement of diaphragms without interruption of service.

The Kerotest Catalogue No. 5 tells you the whole story. Send for your copy.

KEROTEST MFG. CO. PITTSBURGH

LOCAL REPRESENTATIVES
(Stocks Maintained for Immediate Delivery)

Amarillo, Texas - 816 Grant St.	Axtell Company
Atlanta, Ga. - 285 Marietta St.	J. M. Tull Rubber & Supply Co., Inc.
Baltimore, Md. - 108 South Street	Clendenin Bros., Inc.
Boston, Massachusetts - 110 High Street	A. E. Borden Company
Cincinnati, Ohio - Burbank St.	Merkel Bros. Co.
Cleveland, Ohio - 1748 East 22nd St.	Williams & Company, Inc.
Decatur, Illinois - 133 Williams St.	Field & Shorb Co.
Des Moines, Ia. - W. 11th & D.M.U.R.R.	C. L. Percival Co.
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Greensboro, N. C. - 714 W. Market St.	Home Appliance Service Co.
Houston, Texas - 734 M & M Bldg.	Lingo-Walter Company
Indianapolis, Ind. - 229 E. South St.	F. H. Langsenkamp Co.
Lubbock, Texas - 900 Avenue H	Axtell Company
Milwaukee, Wis. - 512 N. Water St.	Chase Brass & Copper Co., Inc.
Minneapolis, Minn. - 145 N. 10th St.	Chase Brass & Copper Co., Inc.
Newark, N.J. - Jefferson and Chestnut Sts.	McIntire Connector Co.
New York, N. Y. - 58 Warren St.	Paramount Electrical Supply Co., Inc.
Philadelphia, Pa. - 1135 Callowhill St.	Melchior, Armstrong, Dessau Co., Inc.
Pittsburgh, Pa. - 901 Pennsylvania Ave.	Williams & Company, Inc.
San Angelo, Texas - 506 So. Oak St.	Axtell Company
St. Louis, Mo. - 2817 Laclede Ave.	Brass and Copper Sales Company
Seattle, Wash. - 314 Ninth Avenue North	Harrison Sales Company
Sioux City, Iowa - 2310 East 8th St.	National Refrigeration Service
Syracuse, N. Y. - 314 W. Fayette St.	Syracuse Supply Company
Washington, D.C. - 308 10th St. N.W.	Refrigeration Equipment and Supply Co., Inc.
Wilmington, N.C. - 1012 So. Front St.	N. Jacobi Hardware Co.
Winnipeg, Man., Canada - 156 Bell Ave.	Arctic Ice & Fuel Co., Limited

FACTORY REPRESENTATIVES

Chicago, Ill.	G. C. Taylor, 2317 W. Marquette Road (Local Stock)
Dayton, Ohio	E. J. Kimm, 517 Grafton Ave.
Detroit, Mich.	Thomas B. McLaughlin, 18273 Santa Rosa Drive
Los Angeles, Calif.	Van D. Clothier, 1015 E. Sixteenth St. (Local Stock)
New York, N. Y.	J. A. Strachan, 806 Graybar Building
San Francisco, Calif.	A. W. V. Johnson, Merchants Exchange Bldg. (Local Stock)

FOREIGN REPRESENTATIVES

Australia	George Brown & Co., Ltd., 267 Clarence St., Sydney, N.S.W.
Europe	Melchior, Armstrong, Dessau Co., Inc., 116 Broad St., New York, N. Y.
Hawaiian Islands	Theo. H. Davies & Co., Ltd., Honolulu, T. H.
Puerto Rico	Refrigeration Supply Co., P.O. Box 328, Puerta de Tierra, San Juan

KEROTEST

BAKELITE MOLDED PARTS FOR ELECTRIC REFRIGERATORS

Our Engineering Department will cooperate with you in the design of molded parts
Send for Catalog No. 101

CHICAGO MOLDED PRODUCTS CORP.

2155 Walnut St. Chicago, U. S. A.

ENGINEERING

SPEAKERS DESCRIBE OPERATION OF DIESEL ENGINES TO A.S.R.E.

LOS ANGELES—Attention of local refrigerating engineers was spotlighted on the subject of Diesel engines Monday night, Feb. 13, when sections of the A.S.R.E. and N.A.P.R.E. gathered for a joint meeting at the Hemphill Diesel Engineering School.

More than 120 engineers were present to hear the program arranged by the A.S.R.E. secretary, Herman Vetter, an instructor in refrigeration at the Hemphill school.

During the first part of the evening a number of different Diesel plants were operated and explained by James Cook and staff. Engines were started and stopped, reverse mechanisms explained, and injectors were removed, cleaned, replaced, and valves adjusted on the run.

Following the demonstration, which lasted over an hour, members and guests assembled in the lecture room. Here Mr. Vetter read a communication from the American Society of Heating and Ventilating Engineers, inviting A.S.R.E. members to attend a series of noon meetings on air conditioning to be held monthly until June.

Ralph Hemphill then extended a welcome to all who were present and briefly outlined the policies of the Hemphill school. An attempt is being made to equip students with a general knowledge of all of the various types of Diesel engines so that, upon graduation, they will be fully experienced operators.

On a recent trip through the East, Mr. Hemphill had the opportunity to inspect a new Diesel electric plant built by No. 1 Park Avenue Corp., New York City, for use in supplying a large building with all necessary electric power including that for elevator service.

Four 270-hp. Diesels comprise the installation and these are fully automatic, being electrically operated. They start up when the load conditions increase and automatically shut down when the demand decreases. One operator only is in attendance, merely watching operation of the machines through the various gauges and indicators on the switchboard.

The above installation was described by Mr. Hemphill to illustrate how Diesels are becoming popular in industry. Marine installations are now quite common and a number of truck companies including Sterling, Gotfredson, and Stewart will furnish Diesel powered trucks on demand. Tractors are also being successfully operated with Diesel engines, Mr. Hemphill reported.

With the above explanation, Mr. Hemphill introduced E. W. Berry, the school's chief instructor. Mr. Berry was a former officer in the U. S. Navy and is considered an authority on Diesel engines and marine refrigeration.

Elements of Construction

Mr. Berry discussed the elements of Diesel construction, some new developments in this type of power, and gave some data on costs.

"Compression pressures on ordinary gasoline engines run from 70 lbs. up to 100 lbs. per sq. in. on the newer types. Pressures in semi-Diesels begin over 100 lbs., usually from 180 lbs. up to 300 lbs. Above 300 lbs. we get into the full Diesel type although full Diesels generally operate considerably above this. The semi-Diesels are not cold starting but in order to start, require an uncooled surface, the combustion maintaining this uncooled surface during the run," Mr. Berry said.

"A special type of full Diesel engine operates on only 300 lbs. per sq. in., but this is a double-piston type with both pistons operating opposed and moving toward each other on the compression cycle. This type seems particularly suitable to marine work.

"Full Diesel engines may be divided into two distinct classes, those using air injection, and those using solid injection. Before going further, I will describe the operation of the air injection Diesel cycle for those who are not familiar with it.

"The Diesel cycle is a constant pressure cycle. In the four-cycle engine during the first suction stroke the piston draws pure air into the cylinder and on the return stroke this air is compressed to about 30 atmospheres. When top dead center is reached about 900° F. is attained on account of the increase in air temperature with compression," he explained.

"Fuel is injected into the combustion chamber usually 8° or 9° ahead of the top dead center. When air injection is used the air pressure is maintained by a multi-stage air compressor at about 1,000 lbs. When the fuel injection valve opens, the air rushes through the atomizer where it picks up the charge of oil and passes down into the main combustion chamber during which passage the air-oil mixture becomes completely atomized.

"Theoretically there should be no increase in compression when the oil is injected, but in practice there is usually an increase of 1 to 5 atmospheres. As the piston starts on its downward stroke, the fuel burns, maintaining nearly an even pressure throughout the injection period.

"Near the bottom of the stroke, the exhaust valve opens and as the piston again moves up the burned gases are forced into the exhaust manifold and thence to the atmosphere.

Intake, Exhaust Overlap

"The intake valve then opens before the exhaust valve closes. The purpose of this overlap is to allow the velocity of the exhaust gases to assist in pulling the fresh charge of air into the cylinder. This completes the fourth stroke of the cycle.

"Solid injection engines are of two kinds; the jerk pump system, in which injection pressure is maintained only during injection; and the rail injection system, in which injection pressures are constantly maintained.

"In the latter kind, idling pressures are from 1,000 to 2,500 lbs. and full load pressures run up to 4,000 lbs. or sometimes higher. Nozzles for rail injection engines are of the multi-orifice type, in small engines having about five holes .008 in. in diameter, in large engines up to .020 in. diameter."

Jerk Pump System

Mr. Berry pointed out that in the jerk pump system the orifice is a single hole of relatively large diameter and most engines using this system have a precombustion chamber in order to thoroughly mix the fuel with the air; the gasified air-oil mixture then passes from this chamber through an orifice into the main chamber. The turbulence so caused insures complete combustion.

"All full Diesel engines are constant pressure engines, whereas the semi-Diesel type shows a distinct peak in pressure at the time of injection. This rule, of course, has certain apparent exceptions.

"The Packard Diesel airplane engine has a compression pressure of 500 lbs. but upon combustion this pressure rises as high as 1,000 or 1,200 lbs. yet the card still shows a nice rounded peak. The Packard Diesel engine has about one brake horsepower for every 4¼ cu. in. of displacement, and on test has gone as high as one to 3¼ cu. in.

Automobile Experiments

Mr. Berry declared that almost every automobile manufacturer is working on a Diesel engine, although he doesn't expect Diesel automobiles on the road in the very near future. "If automobiles of this type become generally used, oil companies will undoubtedly jump the price of fuel oil, although it is certain that a better grade of fuel oil will be necessary in the automobile Diesel.

"Ordinarily, good, refined Diesel fuel oil running 24° to 27° Baume is easily obtainable, but in many foreign countries 20° oil is the best to be obtained and in some points in Mexico 18° is the highest. An engine designed for service with heavier oil should be of the air injection type.

"The fuel system is the heart of a Diesel engine and loss of efficiency here will cause a heavy loss in operating efficiency," he continued. "For this reason the important training of an operator is on the different types of fuel systems. Different makes of fuel injection engines are entirely unlike each other in their operation. Some injections occur only 8° ahead of dead center and other as far ahead as 80°.

"To many plant operators the word 'Diesel' is mystifying and has often been abused. A large number of the so-called Diesel engines should more properly be called high compression oil engines," he declared.

Operating Troubles

Mr. Berry then discussed operating troubles. "Much of the trouble experienced with Diesel plants throughout the country," he said, "comes from requiring steam engineers to operate them. These men are unfamiliar with this class of equipment and so, in designing Diesels for such services, two-stroke cycle engines should ordinarily be used on account of their simplicity.

"Almost anyone can handle a two-stroke cycle engine of solid injection type, but it requires a skilled operator to handle a four-stroke cycle engine using high pressure air injection," he said.

The final portion of his talk contained information on comparative power costs. "In comparing types of drives," Mr. Berry said, "the most flexible Diesel drive is the Diesel-electric, but this has a disadvantage on account of its high first cost. For this reason the direct drive or the belted drive is usually installed. Of the last two the direct drive is the most satisfactory because of its greater simplicity and compactness," he believes.

Efficiency of Multiple Units

"A Diesel engine operates at maximum efficiency only through a narrow range of load factor, generally 20 per cent at the outside. For this reason if the load has much variation, multiple units will operate more efficiently than a single unit.

"Air injection Diesels are more efficient when operated near 100 per cent load factor, because at lower load factor the refrigerating effect of the injection air as it expands in the combustion chamber causes unburned fuel to pass out the exhaust, resulting in what is known as smoky exhaust. Solid injection Diesels will produce a clear exhaust even as low as 25 per cent load factor."

Comparative Costs

At this point, a few figures on comparative costs of Diesel operated plants as against electrically driven plants, were given.

The Gulf Stream Ice Co.'s plant rated at 20 tons per 24 hours, operated two identical ammonia compressors, one being driven by a 40-hp. electric motor, the other by a 45-hp. Diesel engine. Power costs on the electric drive ran $351 per month, while the total fuel cost for the Diesel drive was only $95, showing a saving per month of about $256. In this case, power was purchased at $.017 per kwh. he stated.

The Oakland ice rink has an installation consisting of two 10x10-in. ammonia compressors, one being belted to a 75-hp. electric motor, and the other belt-driven by an 80-hp. Diesel engine. At $.015 per kwh. the daily operating cost of the electric drive was $21.60 whereas the cost of the Diesel drive including both fuel and lubricating oil totaled $4.98, he claimed.

"These figures," continued Mr. Berry, "are sufficient to indicate that operating costs of the Diesel drive run generally 24 to 27 per cent of that of the electric drive.

"In conclusion I might describe an interesting experience which occurred on a trip made to Alaska for the Lomen Reindeer Corp. to pick up reindeer meat. This company operates a complete chain of stations at which the meat is packed and held pending the arrival of ships to transport it south. Most of the southern stations use artificial refrigeration operated by Diesel engines.

"One of the farther north stations, however, is built on a live glacier and after the meat is cut up it is stored in large storage chambers which are cut into the blue ice of these glaciers.

"A peculiar thing about these stations, was that temperature of meat so held was considerably above that in the artificially refrigerated stations on account of the temperature of the natural ice, so much so, that the ship's refrigeration plant had to be operated several days at maximum load in order to bring the meat down to proper holding temperatures.

"Recently the Lomen company was preparing to place coils in these ice shafts providing artificial refrigeration in order to cool the glacier ice so that the meat might be held at proper temperatures. This move was planned in order to save the additional refrigeration effect required in the ships and to increase the quality of the meat from this station."

Questions and Answers

At the conclusion of the talk, Mr. Berry asked for questions. The questions and his answers follow:

Question—What part of the Diesel engine causes the most trouble?

Answer—Most of the trouble occurs with the fuel injection and then mostly with the nozzle.

Question—What kind of steel is used for nozzles?

Answer—Generally, ordinary mild steel screw stock.

Question—Does the sulphur content of the oil affect the nozzle?

Answer—Not directly, although it does indirectly. The sulphurous acid which is formed by combustion gases combining with the water content of the air causes trouble in old engines through leaking by the rings when it comes out into the operating room and is picked up by the air compressor, where the high sulphur exhaust gas mixes with the moist air forming sulphurous acid. Finally, of course, it returns to the nozzles themselves. This is eliminated by taking the suction from an outside point where clean air is available.

Question—Are any Diesel engines reversible?

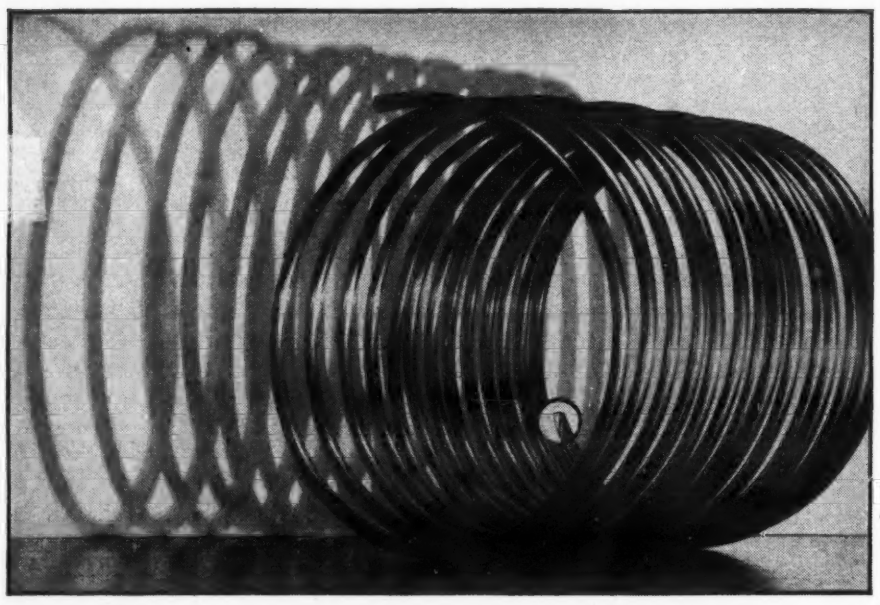
Answer—All large marine engines are directly reversible. Small ones are not, and these use a planetary transmission for reversing.

Question—What is your idea for recovering all exhaust heat?

Answer—This is being done on many of the larger marine jobs. Low pressure boilers are used and the waste heat provides all of the steam needed on shipboard for heating, cooking, and other purposes.

SWEENEY WILL ADDRESS G. E. FOREMEN

SCHENECTADY, N. Y. — A. M. Sweeney, manager of the production division of the G. E. refrigeration department at Cleveland, will address the Foremen's Association of the local General Electric plant, Feb. 23.



FRENCH TUBES to fill every standard and special need

THERE ARE French Copper Refrigeration Tubes . . . small diameter and thin wall seamless tubes . . . for every refrigeration requirement.

Stock sizes are 1/4 in., 3/8 in., 7/16 in., 1/2 in., 5/8 in., and 3/4 in., all in .035 in. gauge. Heavier gauges can be made to order. Stock coils are 25, 50 and 100 feet long. Longer lengths can be supplied at short notice.

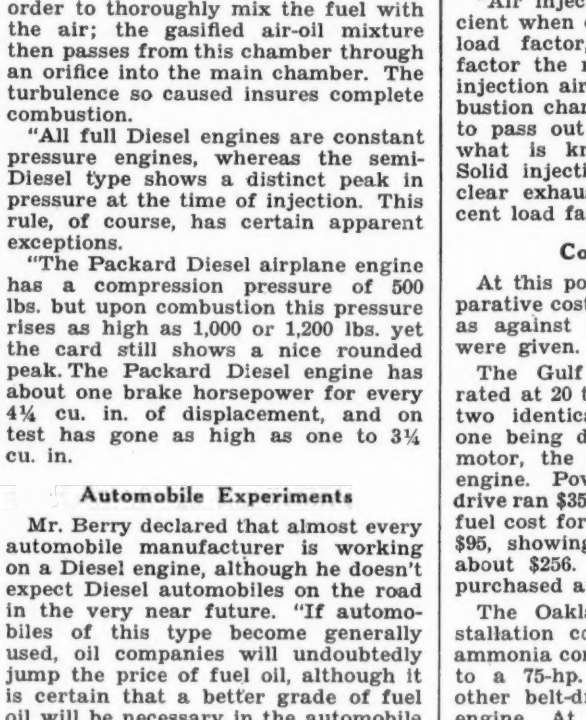
French Deluxe Copper Refrigeration Tubes are free from oxide and foreign matter. Each coil is *completely* dehydrated sealed, rigidly tested and reaches you ready for use. For manufacturers who prefer to do their own dehydrating, the French Manufacturing Company produces copper tubes dried (commercially dehydrated), with either open or closed ends.

All French Copper Refrigeration Tubes possess the requisite properties for lasting, dependable service. Their grain structure is uniform. This important quality is in every coil because highest metallurgical skill, long manufacturing experience and only the best of raw material go into their production. Additional information will be furnished upon request.

THE FRENCH MANUFACTURING CO.
General Offices: Waterbury, Connecticut

FRENCH REFRIGERATION TUBES

THE NEW MUELLER DOUBLE-PACKED OPERATING VALVE FOR HEAVY DUTY



AX-11190 Code-Sturdab

This valve is the answer to the need for an extra sturdy valve for large commercial installations and for air-conditioning work.

Its openings are full flow, assuring unrestricted passage of the refrigerant up to and including 3/4" O. D. diameter tubing.

It is double-packed and incorporates the back-seating feature. The body, which is extra heavy, and the indexed hand wheel are of forged brass; the stem is of Tuf-Stuf, a corrosion resisting alloy of great strength. The mounting plate is integral with the body.

The packing is not affected by heat or any other of the refrigerants in general use and may be replaced with the valve under pressure without loss of refrigerant or interruption of service.

Note—Mueller AX-11190 is one of the new line of full flow valves, fully described and illustrated in our new catalog ready about March 15th. Send for your copy.

Mueller Brass Co.
PORT HURON, MICHIGAN

Mueller Brass Co. Valves and Fittings are approved by the Underwriters' Laboratories of Chicago

We manufacture a complete line of valves and fittings and can supply your every requirement

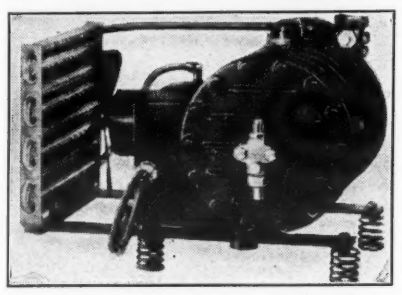
REPUBLIC DEVELOPS HERMETIC MACHINE

DAYTON—Republic Mfg. Co. here has just announced a new hermetically sealed compressor which it will offer to the trade this year. The new unit consists of a motor and compressor sealed in a cast drum, liquid receiver, Mullins evaporator, Tagliabue temperature control, and a Bush condenser, cooled by a four-blade fan (driven separately).

The compressor has a bore and stroke of 1½ by ⅝ in., driven directly inside the casting by a 1/6-hp. motor at a speed of 1750 r.p.m. The crankshaft is counter balanced to reduce vibration.

Continuous oiling is effected by means of a combination splash and force-feed system, the announcement states. Plate valves are used on both

Hermetic Compressor



Hermetically sealed compressor made by Republic Mfg. Co.

piston and cylinder. The displacement is 1100 cu. in. per minute.

Motor starting is accomplished with an electro-magnetic switch, according to Republic engineers, the motor being a capacitor-start, induction-run type designed especially for this compressor.

The cooling unit is flooded with a high side float, and sulphur dioxide is the refrigerant used. The new condensing unit is offered in three sizes, with 2, 3, and 4 ice cube trays. A one-year guarantee is offered.

COONLEY ELECTED PRESIDENT OF STANDARDS ASSOCIATION

NEW YORK CITY—Howard Coonley, president of the Walworth Co. of this city, has been elected president of the American Standards Association for the year 1933, succeeding Bancroft Gherardi, vice president of the American Telephone and Telegraph Co.

F. E. Moskovies, chairman of the board of directors of the Marmon-Herrington Co., Indianapolis, was elected vice president.

A.S.M.E. LISTS STANDARD ABBREVIATIONS

NEW YORK CITY—A tentative national standard for abbreviations of common scientific and engineering terms has been published by the American Society of Mechanical Engineers under the auspices of the American Standards Association.

Series of Dealer Meetings Begun By Leonard

CLEVELAND, Feb. 20.—First of the series of 44 retail schools which the Leonard Refrigerator Co. of Detroit is launching this month on a national scale was held here today, with more than 100 dealers and salesmen in attendance, according to A. M. Taylor, merchandising director.

The scene of the meeting was the Statler hotel, and executives of B. W. Smith, Inc., Cleveland distributor, played the part of hosts. The meeting was conducted by a "flying squadron" of factory officials, composed of R. I. Petrie, general sales manager, Mr. Taylor, and J. J. O'Neil, new business manager of the Refrigeration Discount Corp.

The party of factory officials left here tonight for Indianapolis, where the second meeting in the series will be held Tuesday at the Claypool hotel, with dealers and salesmen in the distributorship of the Capital Paper Co. in attendance.

On Thursday, the "flying squadron" will conduct its program in the Stevens hotel, Chicago, for the dealer organization of L. C. Wiswell Co., distributor in that area.

Meeting in Columbus

DETROIT—A second party of factory sales and advertising executives will stage one of Leonard's retail schools in Columbus, Ohio, Friday, Feb. 24, it was announced.

Members of the group are R. G. Nelson and Robert J. Walker, respectively of the Leonard sales and sales promotion departments, and C. C. Campbell of Brooke, Smith & French, Inc., Leonard advertising agency.

The meeting will be held by Columbus Ignition Co., Leonard distributor in that area, with executives of the company, headed by R. B. Gargett, playing host to dealers and salesmen.

Leonard Develops Line Of Water Coolers

(Concluded from Page 1, Column 2)

tain temperatures consistently under 50°.

Precooling, effected by utilizing the already cold waste water, is an additional economy feature of the two bubbler top pressure-type coolers. Incoming water flows through a brass pipe which runs inside a larger pipe carrying the waste water. This precooling, Mr. Petrie pointed out, contributes materially to the operating efficiency of the units.

200 FURNITURE DEALERS MEET IN MILWAUKEE

MILWAUKEE—Some 200 furniture dealers, manufacturers, jobbers, and salesmen were expected to attend the two-day meeting of the Wisconsin Retail Furniture Dealers' Association convention, scheduled to be held at the Schroeder hotel here, Feb. 20 and 21.

CATALOGS

Bonderizing

In the Feb. 15 issue of the *Parkerizer*, publication of Detroit's Parker Rust-Proof Co., are stories of how the Parker rust-proofing process has been applied to Chrysler automobile wire wheels and body metal, to various parts of washers manufactured by Fairgrieve & Son, Ltd. of Toronto, to baking equipment made by the Baker Perkins Co. of Saginaw, Mich., and to Chanson automobile heaters.

G. E. Photoelectric Recorder

General Electric Co.'s new Photoelectric Recorder is officially presented to the various engineering fields in a new four-page brochure. The publication lists those quantities which the new instrument records, shows a cutaway view of the device, points out its features, and gives specifications of the company's various standard direct-current recorders.

Ultra-Violet Luminaires

Now being distributed among home owners and operators of commercial and industrial establishments is a new booklet published by the Westinghouse Electric & Mfg. Co. in which are discussions of the benefits to be derived from the artificial sunshine of ultra-violet lamps, and complete descriptions, prices, and specifications of the company's new dual-purpose luminaires—lamps which supply both illumination and ultra-violet rays.

Enduro Stainless Steel

Architects, engineers, contractors, and fabricators will find a great deal of interesting information concerning the architectural applications of Enduro stainless steel in a brochure just issued by the Republic Steel Corp., Youngstown, Ohio. The booklet discusses the uses, analysis, and methods of working with the product.

"Self-Syn" Motors

The Ideal Electric & Mfg. Co. of Mansfield, Ohio, has issued a new bulletin giving for the first time a full description of its new "Self-Syn" motor. The bulletin, 20 pages long, gives details of the motor's design, construction, and characteristics. New motor is a self-excited, self-synchronizing, self-contained general purpose motor.

Brunner Compressors

Refrigeration division of the Brunner Mfg. Co., Utica, N. Y., has just issued a new catalog in which it illustrates, and gives complete specifications of its entire line of single- and twin-cylinder compressors, domestic and commercial high sides.

M & E Refrigeration Products

Prepared for dealers and distributors and prospective dealers and distributors is a new catalog presenting the complete line of refrigeration products manufactured by the Merchant & Evans Co. of Philadelphia.

The catalog contains illustrations and specifications of the company's commercial and household condensing units, instructions for installing and servicing M & E equipment, prices and specifications of Larkin coils, M & E milk-cooling equipment and water coolers.

Blakeslee Degreasing Machines

G. S. Blakeslee & Co. of Chicago is distributing among manufacturers a new booklet in which are described the company's line of degreasing machines, and its Blacosolv, the solvent used with the machines to remove grease and rust from metals before they are plated, shellacked, varnished, pickled, etc.

Moss Ice Cream Cabinets

J. Moss & Sons of Brooklyn is distributing three new pieces of literature among prospective buyers of its sheet steel products. One illustrates and describes its nine-model line of ice cream cabinets. Another describes its restaurant equipment, and the third presents its line of bottle coolers.

Barnes Machinery

No. 102 of the Barnes Drill Co.'s (Rockford, Ill.) bulletin series deals with the subject of honing—finishing the bore of cylinders. It discusses first the general process, then the design and features of Barnes honing equipment, and presents on its last pages illustrations of the various honing machines it manufactures.

Listing briefly, with illustrations, the principal models of the entire Barnes line of drilling, tapping, and honing machines, the company has also issued a diminutive handout and mailing booklet for prospective buyers.

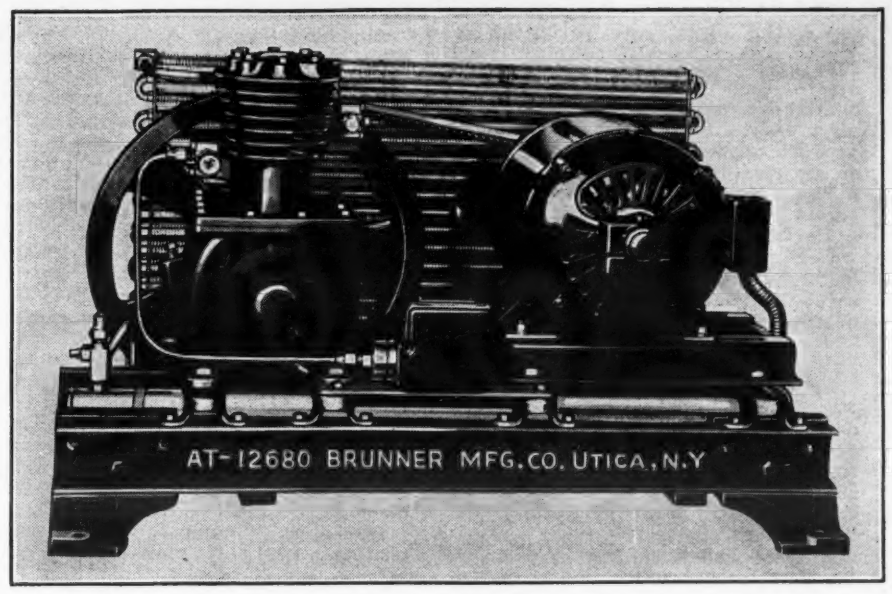
Udylite Process

A recent issue of the *Udylite News*, organ of the Udylite Process Co., Detroit, describes use of Udylite-cadmium in rust-proofing a new tire regrooving device just placed on the market, and use of the same material in plating the negative plate in lead accumulators. This issue also presents a description and specifications of the Maximus Junior, apparatus for rush plating jobs or production plating of small parts.

Industrial Safety Contests

As a means of stimulating interest in plant safety activities and encouraging employes to make efforts to prevent accidents, the Policyholders Service Bureau of the Metropolitan Life Insurance Co., New York City, has issued a booklet, "Methods of Organizing and Conducting Industrial Safety Contests," in which are presented the practices of several industrial organizations in sponsoring safety contests.

Refrigerating BRUNNER Equipment



Have you heard of BRUNNER'S NEW SALES PLAN?

A policy revolutionary in its application, yet one that actually gets the business.

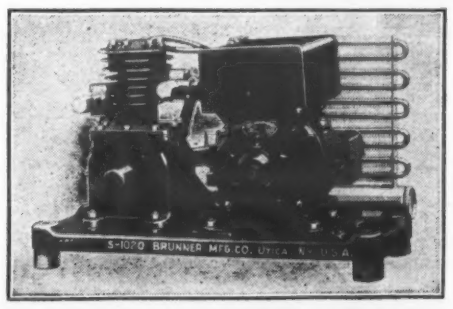
It puts Distributors in a position to profitably handle business that heretofore could not be had.

This is a policy in tune with the times—it's different. There is no other proposition like it. You must know the whole story to fully grasp the possibilities offered in BRUNNER'S exclusive Distributor Franchise.

The line includes four dependable Compressors fifteen efficient High Sides—air and water cooled—gas engine and electric—in a range of ⅙-H. P. to 1½ H. P.—Commercial and Domestic Low Sides too.

Some desirable territories are still open, but may be closed soon. If you are interested in a genuinely profitable Distributors' Franchise, we suggest that you act quickly.

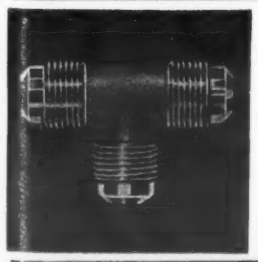
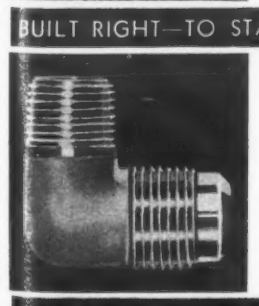
BRUNNER MANUFACTURING CO.
REFRIGERATION DIVISION
UTICA, N. Y.



Number S-1020
⅙ H. P.
Domestic High Side

BRUNNER
A name built by 27 years of service

BRUNNER MFG. CO., UTICA, N. Y.
Gentlemen:
Send full particulars of your 1933 line Refrigerating Equipment. Our letterhead attached.
Firm Name .....
Individual ..... Title .....
Street ..... City .....


BUILT RIGHT—TO STAY TIGHT

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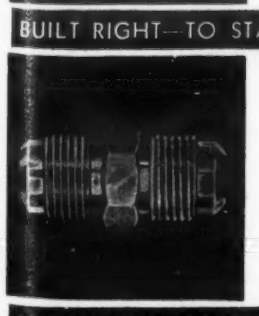

BUILT RIGHT—TO STAY TIGHT

INDEPENDENCE

Today we celebrate the birthday of the most noted exemplar of independence the world has ever known. To his efforts, patriotism and faith in his fellow citizens, Americans of this generation pay respectful homage.

The maker, installer and user of Automatic refrigeration is today assured of the independence from leaky fittings because of the experience, skill and resources of Commonwealth Brass Corporation.

Seepage-proof fittings, "Built Right—To Stay Tight," have contributed in no small degree to the progress of the industry, and Commonwealth is proud to have been associated with their development since the inception of the science of automatic refrigeration.

YOU ARE CORDIALLY INVITED TO SEND FOR A COPY OF OUR CATALOG NO. 36

COMMONWEALTH
BRASS CORPORATION
DETROIT

AIR CONDITIONING

Dr. Hill Describes Physiological Tests Of Effects of Air Conditioning

(*Concluded from Page 1, Column 1*)

sure over it is reduced—as by going up to higher altitudes. Instead of climbing a mountain to obtain lower air pressure, however, it is possible to produce a vacuum artificially by a steam ejector, he showed.

The ejector operates over an enclosed body of water, producing nearly a perfect vacuum, and causing the water to evaporate at a temperature below 50° F. This water is circulated through the air-cooling coils of the air-conditioning system.

Steam Condensed

In a separate cycle in the system, Mr. Jones showed, the steam is condensed—in a shell-and-tube condenser—and air and inert gases removed from the system. Installations of the steam-ejector system for railroad car cooling employ an air-cooled condenser, he said.

A recent application of the system by the Carrier organization is to cooling of homes, he reported. In these, the vacuum is produced right in the cooling coil, which is used in winter for heating.

Before the 15-minute skit on selling comfort cooling, Mr. Lucey of Frigidaire's air-conditioning division, Dayton, told of the interest in air conditioning which the Frigidaire field organization displayed two weeks ago in an air-conditioning school. About 40 invitations were sent out, and more than 200 delegates came to attend the school, he reported.

Answers Objections

Actors in the playlet were Mr. Lucey (an air-conditioning salesman) and Mr. McEwan (owner of a gown-shop, and prospect for summer cooling). Title of the presentation was "Answering Objections." Some of the points brought out are summarized below.

Objection: Right now business isn't good enough to justify investment in air-conditioning equipment.

Answer: That's just the reason why you should put it in now, because air conditioning is a business builder.

Objection: It's too expensive, considering the short time during the year that it will be used.

Answer: You invest in electric signs, window displays, advertising, winter heating, and other items which are effective for only short periods, and air conditioning is one thing that will be appreciated by *all* your customers during the summer.

Capitalize on Newness

Objection: Air conditioning is too new, I don't want to install equipment which is still in the experimental stage.

Answer: Air conditioning is simply a new arrangement of several parts and materials that have been used in industry for many years. You can capitalize on its newness by advertising to the public that you have installed this equipment for the comfort of your patrons.

Objection: I don't believe that my customers will buy more dresses just because the store is air conditioned.

Answer: It might be that some people will not buy more dresses, but more people will buy some dresses, if you install air conditioning.

Objection: What advantage will it be to me to install air conditioning, when in a short time all gown shops in town will have it.

Answer: You will have the advantage of being the first, and can capitalize on that fact by advertising it.

Price Argument

The argument then settled down to a discussion of price, the prospect stating that a competitor had offered him a price $500 lower, and the salesman contending that his price was necessary for good quality. Finally, the prospect signed the order.

Dr. Hill, a well-known air-conditioning engineer from Chicago and consultant for the Holland Furnace Co., traced functions of air conditioning from the primitive man rubbing sticks together to start a fire, through the Roman house, Benjamin Franklin's stove, furnaces, boilers, and ventilation, to its present state which considers cooling, cleaning, and control of electrical and chemical properties of air.

We are now beginning to realize, Dr. Hill said, that air conditioning for human comfort is more than a problem in ventilation, heating, and cooling, but fundamentally a problem of removing the proper amount of radiant and convected heat from the human body.

His tabulation of the important phases of air conditioning showed the six recognized functions, and in addition a division of special treatments. Under these were control of air pressure, electrical properties, physical properties, and chemical properties of air.

Research Projects

Dr. Hill then turned to a discussion of research projects in which he has been active. First was a study made several years ago by Willis H. Carrier and himself with wetted cotton clothes, in which skin temperatures were determined by wet-bulb temperatures of the suits.

Recent work has emphasized the importance of this early research, he said, because much significance is now attached to the wet-bulb temperature as an index of human comfort conditions.

The chief technical interest in Dr. Hill's talk was in his description and interpretation of a research project which he directed in Chicago for the Holland Furnace Co. In these tests, nude women were used (mostly professional artists' models, because models are least subject to modesty). The subjects were all normal physically.

Physical Exertion

Tests were run with the subjects at rest, doing light work, hard work, and asleep, with varied temperatures and humidities. Light work tests were sorting operations with the subject placing small objects in their respective trays, he explained.

Hard word tests consisted of propelling a bicycle arrangement which drove a blower—whose output was measurable with a pressure gauge, and calculable in terms of ft.-lbs. of work done.

It was found that a clothed subject works most efficiently at a temperature of 80° F. with the relative humidity between 40 and 50 per cent, while nude subjects worked best at about 86° F.

All tests indicated that a higher temperature is better for best working efficiency than most people consider best for comfort, Dr. Hill said.

Another series of tests was run with cork discs partially covering the subject's body, while another used aluminum fins to increase the radiating surface of the body.

The temperature of the forehead is an accurate index of body temperature, Dr. Hill declared, and as the skin temperature is an indicator of a body's comfort, the forehead temperature may be used as a significant measurement of comfort.

Previous research in this field, made by Emma Frances Ward at Johns Hopkins university, he stated, indicated that the optimum forehead temperature for human comfort was between 91° and 93° F.

Describes Furnace

Dr. Hill then described the Holland Furnace unit for residential use, pointing out particularly its flexibility of arrangement. Several hook-ups were portrayed on the screen, some using cold city water for cooling, and others mechanical refrigeration or ice. One of these employed the refrigerating effect of cold water in an air pre-cooler before the water was routed to the condenser of the refrigerating machine.

In conclusion, he gave seven "don'ts" about air conditioning. They were:

1. Don't think of heating and cooling as separate functions of air conditioning. All functions are part of the whole picture.
2. Don't worry too much about humidity, the wet-bulb temperature is a much more significant factor.
3. Don't look to air temperatures as indicative of human comfort conditions—remember the skin temperatures.
4. Don't think that the most comfortable air condition is most conducive to great human efficiency.
5. Don't think home air conditioning is a development of the future, it is here and ready for market development.
6. Don't look for a packaged product type of air conditioner.
7. Don't think a cold sleeping room is best. Better rest seems possible in fairly warm rooms.

Comfort Cooling with Ice

At the outset of his talk, Mr. Loeffel, a strong proponent of ice as opposed to mechanical refrigeration, urged use of the term "Comfort Cooling" instead of "Air Conditioning," saying that the subject under consideration is an outgrowth of industrial air conditioning, with special attention to the requirements of human beings.

He submitted the proposition that portable ice type room coolers should be promoted in the present depressed market because of their low first cost. He believes that if comfort cooling is to gain public acceptance, it must first be developed with the ice type of cooler.

Pioneering of Ice Men

"Electric refrigerator manufacturers would never have sold the millions of machines if ice boxes hadn't pioneered the market," he declared. In the same way, he opined that ice comfort coolers can pioneer the new market for electric systems.

First products in the radio field were simple crystal receiving sets, he related, with no resemblance to the highly efficient superheterodynes of today.

To support his contention that cooling should be done by a low-cost mechanism, he showed a chart of the comparatively small number of hours per year that temperatures in Detroit exceed 75, 80, 85, 90, and 95° F.

250 ATTEND SCHOOL ON AIR CONDITIONING

(*Concluded from Page 1, Column 3*)

University of California who described the psychometric chart and its uses.

C. W. Brown, assistant professor of psychology at the University of California, speaking on the "Physiological-Psychological Basis of Comfort," stated that the condition of the air in a home or office building plays a more important part in the comfort and efficiency of the body than is generally realized.

In an analysis of cooling fundamentals, Prof. Walter S. Weeks of the University of California told of problems connected with working mines at great depths.

Prof. L. M. K. Boelter of the University of California spoke on "Insulation and Heat Capacity in Relation to Heat Transfer." Lee Hungerford, chief engineer, Fox West Coast Theaters, outlined the experience of this amusement concern with air-conditioning plants in its houses.

A practical talk on "Cooling With Ice in California Valley Summer Weather" was made by H. L. Lincoln of the Union Ice Co.

A dinner meeting was held at the Engineers club in San Francisco, with Dr. Albert H. Rowe, specialist in respiratory diseases, speaking on the "Medical Aspects of Air Conditioning."

On Friday, W. E. Leland discussed "Design Procedure for Heating and Cooling Installations," followed by F. W. Kolb, air-filter engineer, who spoke on air filtration.

J. J. Donovan spoke on collaboration between the architect and engineer, describing both as trouble shooters before trouble commences. "Control and Regulation" was then discussed by T. B. Hunter, and B. M. Woods and associates, University of California, spoke on "Cooling Rural Homes—A study in Progress."

L. H. K. Boelter and Virgil H. Cherry presented a paper on "Air Infiltration Through Windows," pointing out that as much as 30 per cent of heat loss in high buildings is due to losses through windows.

LINK-BELT MANUFACTURES AUTOMATIC SCREW STOKER

CHICAGO—The Link-Belt Co. of this city, manufacturer of coal and ash handling equipment and other power plant machinery, has recently introduced the Link-Belt automatic underfeed screw stoker.

This stoker is at present being made in a number of sizes suitable for heating plants and smaller steam plants—boiler capacities from 10 to 250 B.H.P.

The new stoker features a motor mounting which permits direct connection to the forced-draft fan, providing an easily accessible assembly.

It is equipped with a variable speed transmission regulation coal feed. Automatic electric controls for operating at pre-determined boiler pressures are standard.

ELECTRIC RATES REDUCED IN BALTIMORE

BALTIMORE—A reduction in the electric rates to domestic consumers of the Consolidated Gas, Electric Light & Power Co., serving Baltimore and vicinity, has been effected by agreement with the Public Service Commission, according to an announcement made by the commission.

The initial rate for domestic service will be reduced from 6.72 cents net per kilowatt hour to 5 cents. The new rate will become effective June 1.

CENTURY REPORTS INCREASE IN OIL BURNER SALES

CEDAR RAPIDS, Iowa—Total sales of Century oil burners, manufactured by the Century Engineering Corp. of this city, for January, 1933, were greater than the same period in 1932, according to J. A. Lattner, secretary-treasurer.

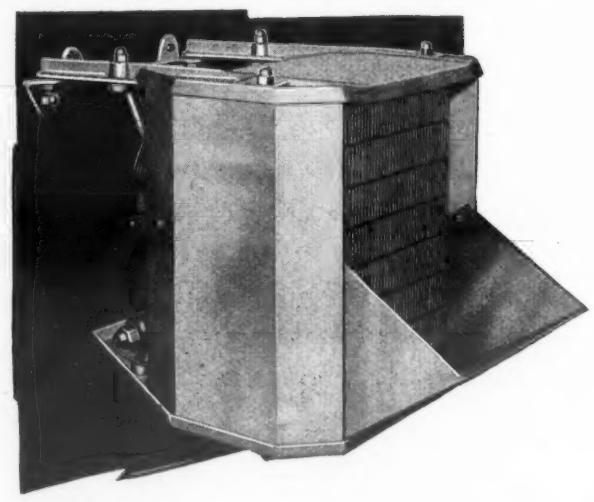
DONOVAN APPOINTED TO N. Y. COMMITTEE

NEW YORK CITY—J. J. Donovan, manager of the air-conditioning department of the General Electric Co., has been appointed as chairman of a committee named by the Electrical Association of New York to promote a better public understanding of the functions of air conditioning.

The committee will propose a definite terminology for the science of air conditioning.

TIMKEN TO EXHIBIT NEW OIL BURNER AT FAIR

CHICAGO—Timken Silent Automatic Co. of Detroit has asked permission to introduce a new type of oil burning furnace in the Common Brick Association house, in the home section of the Home and Industrial Arts Group at "A Century of Progress" exposition, according to World's Fair officials.

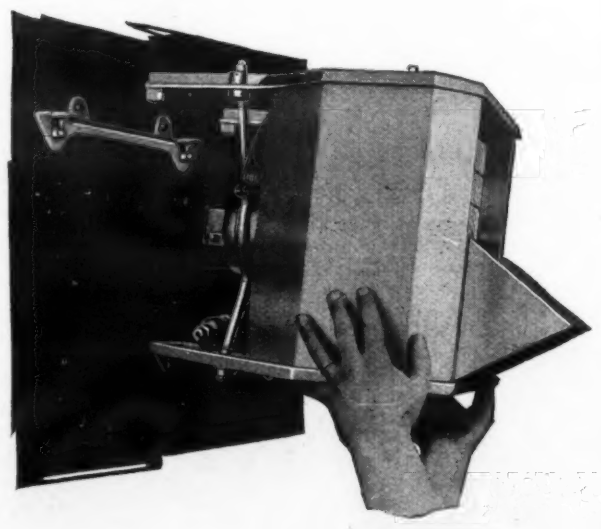


The enthusiastic reception and acceptance of the Humidi-Cooler, indicated by hundreds of letters, from users all over the world, during the two year period since the inception of this business, is the inspiration which now enables us to offer a new and better product—a Humidi-Cooler with all the original features plus—unique design—greater capacity—better humidity control—reversible air deflector—spring motor mounting—greater ease in installation—and finally the most attractive cooling unit ever built.

Again! The Humidi-Cooler accepts the RESPONSIBILITY of LEADERSHIP!

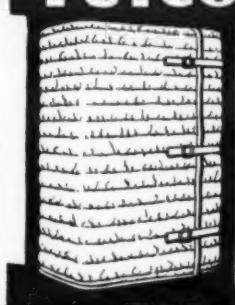
Note particularly the new *one man* suspension bracket which makes the Humidi-Cooler the easiest unit to install. The Humidi-Cooler eliminates messy drip pans and unsanitary baffles which are necessary with ordinary coils in product cooling.

Write For New Lower Prices

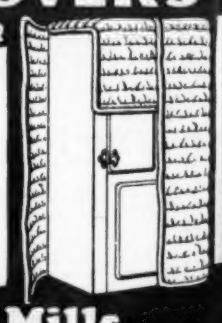


THE
SAWYER ENGINEERING CO.
72 Water St.
West Haven, Conn.

Fulco Adjustable REFRIGERATOR Covers
FIT ANY SIZE REFRIGERATOR



● Big savings over old styles. One size fits any refrigerator; small, medium or large. Easy to adjust—more convenient. Made of strong, durable green drill with non-lump filler. Affords perfect protection to every type of refrigerator finish. Write for prices today.



Fulton Bag & Cotton Mills
Manufacturers Since 1870
Atlanta St. Louis Dallas
Minneapolis Brooklyn New Orleans Kansas City, Kan.

LINDSAY WRITES ON QUALITY IN PRODUCT

By Harvey Lindsay
President, Dry-Zero Corporation

Differences in the overall performance of well-known, widely distributed makes of electric refrigerators on the market today exceed 100 per cent. This means that size for size, under exactly similar conditions, certain makes are 100 per cent more costly to operate than others.

This statement is not intended to be sensational. It is based on competent, impartial laboratory tests. It is not offered as an indictment of the shoddy quality of some of the refrigerators competing in today's market.

It is intended to be a clear-cut picture of the foundation upon which the electric refrigerator industry will operate during 1933. For the intrinsic quality of an industry's products is the foundation upon which the industry's sales and profits are built.

Reasons for Variations

The reason for such wide variation in the quality of today's electric refrigerators is, of course, known to all of us. At one extreme, we have manufacturers attempting to sell their products primarily upon the appeal of low prices; at the other extreme we have a group endeavoring to merchandise solid quality.

Between these extremes, we have numerous manufacturers that have compromised quality with price in varying proportions. Each of these manufacturers believes his particular policy is the best for him.

Obviously, all can't be right.

Believes in Quality

I am inclined, naturally, to believe the policy of not only claiming, but actually adopting good quality to sell at a reasonable price will triumph. Of course, I must admit that the low-price group made progress during the past year, and that because of this success, the group will be increasingly active this year, at least during the first six months. What I do not admit is that their success will continue.

Looking back over the past few years, we note that from the autumn of 1929 to the spring of 1932 there was a constantly increasing tendency to sell all types of merchandise on a price basis. It was toward the end of this period that low-priced electric refrigerators began to be sold in quantity. This was natural because they were in step with public buying sentiment.

Shift During 1932

In the spring of 1932, however, there began to be evident a shift in the general merchandising picture. Department store executives, than whom there are no keener judges of public buying sentiment, started experimenting with the substitution of a quality appeal for the price ballyhoo that all of them had been using so intensively.

These experiments quickly indicated that the public was surfeited with shoddy merchandise at cheap prices, and that good merchandise at reasonable prices could be sold in volume. In fact, there were several instances where slight increases in the price of certain types of merchandise actually stimulated sales.

Since last spring this shift from price back toward quality has been swift. In fact, the impotence of the bargain appeal was generally conceded at the January convention of the National Retail Dry Goods Association in New York.

Retail executives attending the convention were told repeatedly that the time is now ripe for directing the bulk of selling appeal toward quality. They heard emphasis placed on the promotional advantages of quality merchandise in view of the fact that the public, through bitter experience, has learned that in the end it gets only what it pays for.

Quality as Catchword

The most significant thing they heard, however, was that "quality" as a catchword is of no value—that quality claims must be backed by true quality in the merchandise offered.

From these things, it appears that the low-priced electric refrigerator that drifted with the current of bargain buying in the spring of 1932 will be bucking a strong current in the opposite direction during 1933.

Many leaders in the electric refrigeration industry seem to sense this when they state that quality arguments will be more potent this year than the lure of low price. Whether this will lead to actual improvement in the quality and performance of many makes of electric refrigerators remains to be seen.

Results of Cost Trimming

The effect recent cost-trimming efforts are having on the quality of refrigerators produced is interesting. Attempts to reduce the cost of cabinet insulation (which I take merely because I am most familiar with this phase of production) are an example.

In the Dry-Zero laboratory numerous tests have been made to determine what effect different types of insulation have on refrigerator efficiency. In one case we found that substituting one widely used insulation for another increased operating cost of the refrigerator 21 per cent. In another case, operating cost was increased 62 per cent, and in a third case, 76 per cent!

Such shifts as these in the operating quality of any refrigerator, it seems to me, are dangerous. Such lowering of quality and efficiency standards seems illogical. It is a movement against the general trend in other fields where it has become clearly evident that cheaper, poorer merchandise is not what the public wants. Consequently, lower prices and reduced quality seem unsatisfactory as a policy, even for the immediate future.

Certainly such lowering of performance standards will have a suicidal result over an extended period. No manufacturer of a product that fails to give satisfactory service over a reasonable period of time has been able to survive the day when resales become a sizable percentage of the total volume of business.

During the past six months, it has become evident to me that many electric refrigeration dealers and distributors are aware of these dangers. I have heard a few of them hope that the new models of the refrigerators they handle would be better rather than cheaper.

The expression of such a hope, even by a small percentage of the dealers in any industry is extraordinary, for dealers, generally, are prone to pray for price reductions. To me, their unusual attitude is a warning to the entire industry to cut short price-paring and to depend upon improvement of the quality of its products for 1933 success.

Testing Williams Motors

Production tests on the new capacitor motor which engineers of the Williams Oil-O-Matic Heating Corp. have designed for Ice-O-Matic refrigerators. The motors are made in the Williams plant in Bloomington, Ill. The inspector above is determining the brake horsepower characteristics of a motor. Other tests are made for power consumption, current input, speed, and the development of static starting torque.

ASSETS OF NATIONAL TECH SOLD AT AUCTION

CLEVELAND—Assets of the National Technical Institute, a school specializing in the training of refrigeration service men, were sold at auction in a bankruptcy sale here.

York Awarded Contract to Air Condition Archives Building

WASHINGTON, D. C.—Records of our Nation, rich in treasured volumes and historical documents, will be preserved by air-conditioning equipment in the National Archives building now under construction here.

It has just been announced that York Ice Machinery Corp. was awarded the contract for the complete refrigeration and air conditioning of this new structure.

A complete system of air conditioning for the entire building, including administration offices, stack spaces, and exhibition galleries is included in the contract. The building, now under construction on the site of the old Central Market, is another of those included in the present government building program at Washington. It is scheduled for completion by December, 1934.

A personnel of over 1,800 will enjoy the comforts of air conditioning. Seven complete air-conditioning systems, all under automatic control, will supply 315,000 cu. ft. of conditioned air every minute to the various sections of the building.

The air will be filtered, washed, and purified in each of these mammoth conditioning chambers, and distributed by fans and ducts to every portion of the structure.

As a part of the system, equipment is to be installed which will remove all traces of sulphur dioxide gas from the air delivered to the various spaces. Although the fact is not usually considered in general air-conditioning work, such as in theaters, department stores and other human comfort applications, scientific investigation has found that the smoke laden air and gases in our cities, produce an appreciable percentage of sulphur dioxide gas in the atmosphere.

Although the percentage of this gas in the atmosphere is relatively small, it has been found to have a decided deteriorating effect upon papers and books, causing them to turn yellow and crumple with age.

Another feature of the air-conditioning system, according to York engineers, is a method employed to free the air within the enclosure from disagreeable odors.

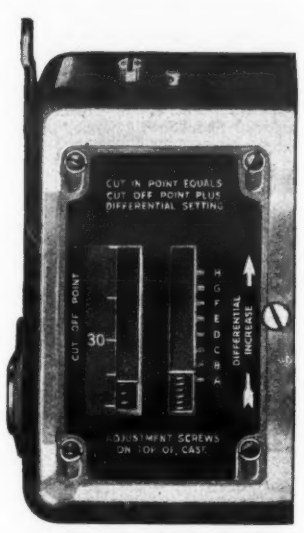
This is to be done by ionization machines applied to each air washer and humidifier, so that all air supplied and circulated will be thoroughly cleaned, washed, and purified. This will vitalize the air and remove all traces of disagreeable odors, York engineers claim.

To cool the large volume of air circulated to the various quarters of the building, refrigeration equivalent to the melting of 1,000 tons of ice every 24 hours is required.

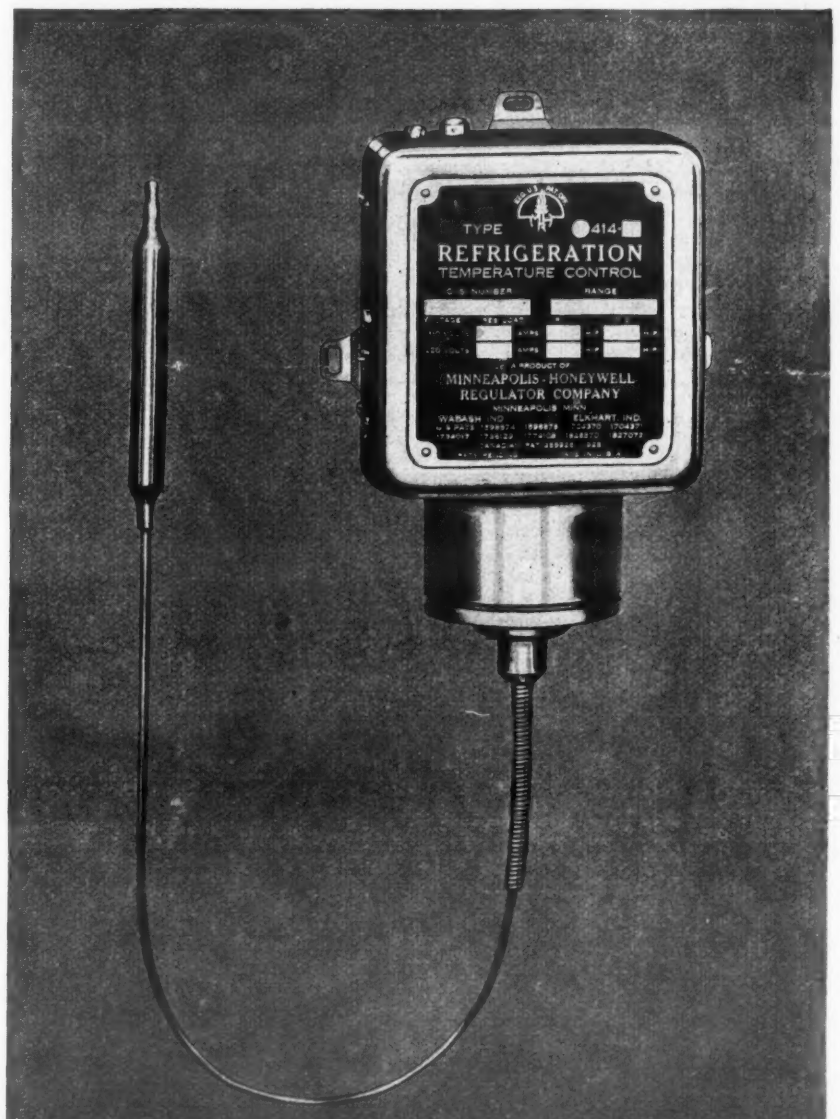
This will be provided by four large York freon (F-12) compressors driven by 300-hp. synchronous motors.

This refrigerating equipment will be of the same general design and type as that now being installed in the new left wing of the U. S. Senate Office building, and as that to be installed in the new U. S. Post Office building and the new U. S. Department of Justice building.

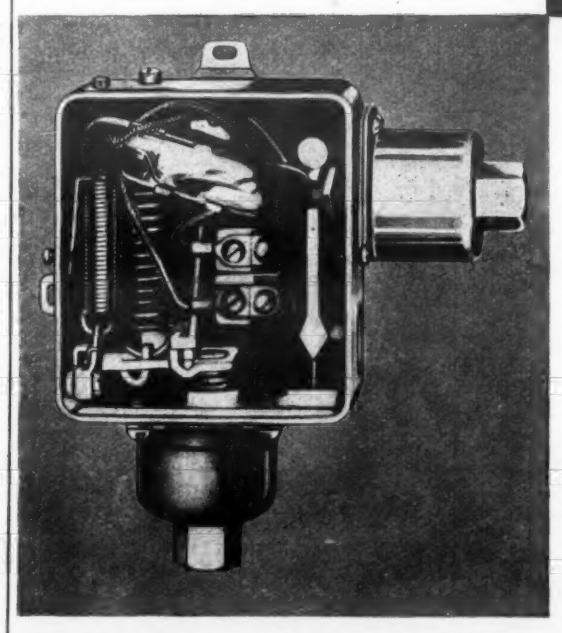
In winter, the air conditioning equipment will clean, warm and humidify the aid to comfortable conditions and likewise provide an atmosphere within the stack spaces which will prevent the drying out of their contents and insure their preservation.


CUT IN POINT EQUALS CUT OFF POINT PLUS DIFFERENTIAL SETTING
CUT OFF POINT
30
DIFFERENTIAL INCREASE
ADJUSTMENT SCREWS ON TOP OF CASE

Side view, showing visible scales and locking device — exclusive Minneapolis-Honeywell features of the new refrigeration temperature and pressure controls.



EXCLUSIVE... AND VITALLY NECESSARY FEATURES



■ Refrigeration Pressure Control L413 with high pressure cutout, showing simple, sturdy internal construction with Con-Tac-Tor mercury switch and leveling indicator

■ REFRIGERATION TEMPERATURE CONTROL T414

ONLY Minneapolis-Honeywell offers such exclusive yet vitally necessary features in its refrigeration controls. And only Minneapolis-Honeywell can offer a background of 48 years of control engineering experience . . . . Minneapolis-Honeywell Refrigeration controls are suitable for all types of commercial installations, either temperature or pressure, with or without high pressure cutout. They are available in several models with temperature ranges from −50° F. to +50° F. and with pressure range from 22-inch vacuum to 35 lbs. pressure with high pressure cutout ranges from 110 to 220 lbs. . . . Visible scales, locking and leveling devices, Con-Tac-Tor mercury switches, wide range, narrow operating differential are Minneapolis-Honeywell features which are vitally necessary to efficient, simple and trouble free operation of these truly precision instruments which are priced well under what you would ordinarily expect. . . . Our new catalogs are now available. Write for your copy. Minneapolis-Honeywell Regulator Company, 2807 Fourth Avenue South, Minneapolis, Minnesota. Branches and distributors in all principal cities.

MINNEAPOLIS-HONEYWELL
Control Systems

McCORD
REFRIGERATION
PRODUCTS

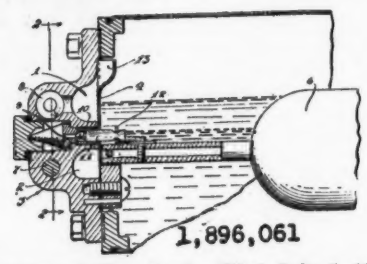
Commercial Evaporators
Domestic Evaporators
Condensers
Easy-Out Ice Trays
Spiral Finned Tubing
Spiral Copper Finned Iron, Steel or Copper Pipe

McCORD RADIATOR & MFG. CO.
DETROIT, MICH.

PATENTS

ISSUED FEBRUARY 7, 1933

1,896,061. APPARATUS FOR RECOVERING AND CONTROLLING THE FLOW OF OIL IN REFRIGERATING SYSTEMS. Ransom H. Beman, Detroit, Mich., and John H. Benson, Salem, Ohio, assignors to Mullins Mfg. Corp., Salem, Ohio, a Corporation of New York. Filed July 7, 1930. Serial No. 466,055. 5 Claims. (Cl. 62—8.)



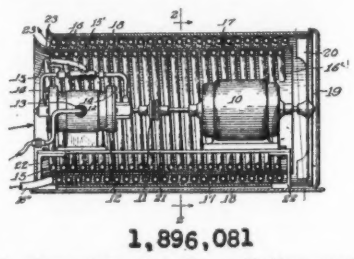
1. Evaporator structure for refrigerating system comprising means for maintaining liquid within the evaporator at a substantially constant level, a small reservoir formed adjacent the main body of liquid in the evaporator, a baffle plate forming a wall of said reservoir and separating the main body of liquid in the evaporator and the liquid in the reservoir, and one or more apertures in said baffle plate for permitting oil or combined oil and refrigerant to pass into the reservoir.

1,896,080. REFRIGERATION UNIT. Edward A. Hampson, Chicago, Ill., assignor to The Hoover Co., a Corporation of Illinois. Filed Oct. 10, 1927. Serial No. 225,152. 5 Claims (Cl. 62—115.)

1. A refrigeration unit comprising a motor and a compressor, a condenser coil surrounding the motor and compressor and having portions radially spaced from one another and a plurality of annular shell members positioned relative the condenser coil, and acting as baffles to direct a cooling air flow over the condenser coil, one of said shell members being located between said radially spaced portions.

1,896,081. CONDENSER. Edward A. Hampson, Chicago, Ill., assignor to The Hoover Co., a Corporation of Ohio. Original application filed Oct. 10, 1927, Serial No. 225,152, and in Great Britain July 5, 1929. Divided and this application filed Oct. 19, 1929. Serial No. 400,782. 2 Claims. (Cl. 251—39.)

1. In refrigerating apparatus, the combination of a condenser including a plurality of concentrically disposed elements,



each element having its radiating surface arranged to describe a cylindrical surface, a cylindrically shaped baffle interposed between said elements and a fan adapted to circulate air over said elements in different directions.

1,896,141. PROTECTING METALLIC SURFACES OF REFRIGERATORS FROM SULPHUR COMPOUNDS. Isidor Kitsee, Philadelphia, Pa., assignor to Mineralite Corp., Philadelphia, Pa., a Corporation of Pennsylvania. Filed March 28, 1930. Serial No. 439,860. 4 Claims. (Cl. 220—64.)

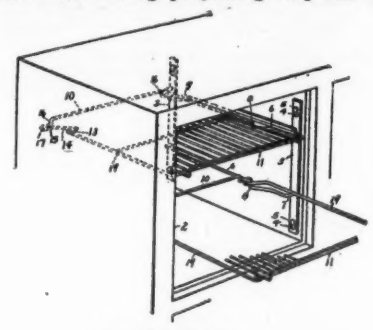
1. The method of safeguarding the surface of metals in refrigerators from the action of sulphur compounds in mineral wool which consists in placing a chemical barrier such as silicate of sodium between said compound and the metallic surface.

1,896,198. REFRIGERATOR CAR DIVIDER. Murdock A. MacMillan, Chicago, Ill. Filed March 30, 1932. Serial No. 602,075. 1 Claim. (Cl. 105—376.)

A freight car having a body portion with side door openings, upright posts at one side of said openings, and side doors for said openings, and also having dividing means located in the body in transverse alignment with said upright posts and consisting essentially of horizontally swingable doors the outer vertical edges of which rest close to opposite sides of the body, double acting spring hinges interposed between said edges and the sides and enabling the doors to swing horizontally in opposite directions, and means on the confronting vertical edges of the doors for preventing the passage of air therebetween when the doors are closed.

1,896,307. RACK FOR REFRIGERATORS, OVENS, AND LIKE COMPARTMENTS. Charles T. Hatch, Albion, Mich., assignor to Union Steel Products Co., Albion, Mich. Filed Oct. 13, 1930. Serial No. 488,233. 7 Claims. (Cl. 211—143.)

7. In a rack for refrigerator, oven, and like compartments, the combination of shelf rails having projecting loop-like off-



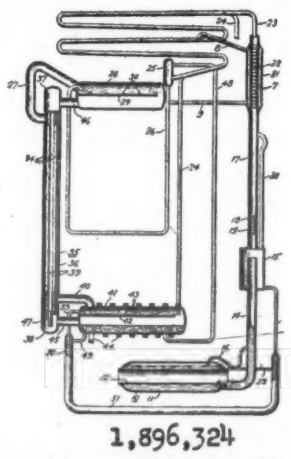
sets providing stops, and a shelf comprising side members having longitudinal inwardly projecting loop-like offsets disposed with their bights inclined so that one arm of each offset rides upon the rails to support the shelf and the other arm projects under the rails supporting the shelf against downward tilting movement when the shelf is extended and one arm coacts with the stops limiting the movement of the shelf, said arms disposed under the rails being in the form of loops, whereby to slidably engage said rails at longitudinally spaced points.

1,896,323. REFRIGERATION. Carl Georg Munters, Stockholm, Sweden, assignor to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed Jan. 20, 1923, Serial No. 248,244, and in Sweden Jan. 20, 1927. 24 Claims. (Cl. 62—119 5.)

1. Refrigerating apparatus comprising a generator, a condenser, an upwardly extending riser conduit communicating with the generator and extending above the generator and connected at its upper end to the condenser, an absorber, an evaporator, a liquid seal connected between the condenser and the evaporator and arranged to permit a lower pressure to exist in the condenser than in the evaporator and absorber, and means for circulation of absorption liquid between the generator and absorber including, a receiver arranged at a high level with respect to the absorber and adapted to receive liquid from the riser conduit and a flow control conduit connecting the generator with the riser conduit.

1,896,324. REFRIGERATION. Carl Georg Munters, Stockholm, Sweden, assignor to Electrolux Servel Corp., New York, N. Y., a Corporation of Delaware. Filed June 13, 1928. Serial No. 285,046. 2 Claims. (Cl. 62—119.5.)

1. In refrigerating apparatus, an absorber, an expeller and means for producing flow of liquid therebetween including a



riser conduit communicating with the expeller at a first level and extending upwardly above the expeller, and a tubular flow control member communicating with the expeller below the top thereof at a second level higher than said first level and communicating with said riser conduit at a third level above said second level and said tubular member having an intermediate portion below said second level.

1,896,341. EVAPORATOR STRUCTURE FOR REFRIGERATING SYSTEMS. Ransom H. Beman, Detroit, Mich., assignor to Mullins Mfg. Corp., Salem Ohio, a Corporation of New York. Filed March 22, 1929. Serial No. 349,033. 7 Claims. (Cl. 137—104.)

1. An evaporating unit for refrigerating systems of the flooded type, comprising a vessel for receiving liquid refrigerant having a wall formed to provide inlet and outlet passageways and inlet and outlet service valves positioned within said wall, the apertures in said wall for receiving the service valves and valve seat parts, and said service valve and valve seat parts being so designed as to be completely reversible for right or left hand assembly.

1,896,350 APPARATUS FOR AND METHOD OF MAKING FINNED TUBING. Harry W. Bundy, Detroit, Mich., assignor, by mesne assignments to Bundy Tubing Co., Detroit, Mich., a Corporation of Michigan. Filed Dec. 30, 1927. Serial No. 243,512. 17 Claims. (Cl. 29—33.)

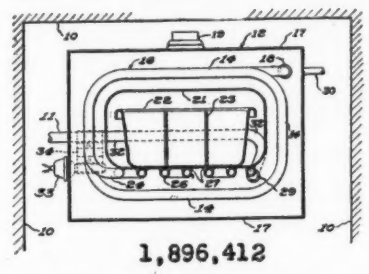
1. An apparatus for forming finned tube which comprises a pair of pressure rolls to which strip stock is guided for forming a fin with the stock engaged between the rolls, the engaging surfaces of the rolls being disposed at an angle to each other whereby to displace the metal and give the strip stock a curvature, means for rotating the rolls so that the rolls also feed the curved fin stock, and means for receiving a member in position to be encircled by the curved fin stock as it comes from the rolls, and means including a cam surface against which the curved fin stock strikes for effecting the helical pitch of the fin.

1,896,385. REFRIGERATING APPARATUS. Thomas C. Whitehead and Harold A. Greenwald, Detroit, Mich., assignors, by direct and mesne assignments, to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed Nov. 11, 1929. Serial No. 406,412. 8 Claims. (Cl. 62—116.)

4. In combination, a refrigerator cabinet having a wall and three chambers opening through said wall, and refrigerating apparatus having portions within each of said chambers, the portions of said apparatus within the lowermost and intermediate chambers being movable as a unit and including means in said intermediate chamber whereby the portions within the lowermost and intermediate chambers may be uncoupled from the portion within the uppermost chamber without disturbing the latter.

1,896,412. EVAPORATOR FOR REFRIGERATORS. George W. Mason, Detroit, Mich., assignor to Kelvinator Corp., Detroit, Mich., a Corporation of Michigan. Filed April 11, 1929. Serial No. 354,347. 10 Claims. (Cl. 62—8.)

3. A refrigerant evaporating unit comprising a refrigerant evaporating conduit having an end portion, and a freezing tray



having a resilient member normally contacting said end portion.

1,896,416. APPARATUS FOR MAKING TUBE. Bert L. Quarnstrom, Grosse Pointe Park, Mich., assignor to Bundy Tubing Co., Detroit, Mich., a Corporation of Michigan. Filed July 21, 1930. Serial No. 469,347. 11 Claims. (Cl. 113—33.)

10. An apparatus for making tube from continuous strip stock comprising in combination, tube-forming means through which the strip and formed tube move with lengthwise movement and which fashions the stock into tube during such movement, a closed heating chamber positioned adjacent the tube-forming means through which the fashioned tube moves, a solder pot within the closed chamber for holding a body of molten solder and over which the tube moves, means within the closed chamber for subjecting the tube to a bath of such molten solder as the same moves through the chamber, a second closed heating chamber positioned adjacent the first mentioned heating chamber and the two chambers being arranged so that the moving tube passes out through the first chamber and into the second chamber with a relatively short length of tube between them, a solder pot within the second chamber for holding a body of molten solder which is entirely separate from the body of molten solder in the first chamber, and means within the second chamber for subjecting the tube to a bath of molten solder as the tube passes through the second chamber.

1,896,448. REFRIGERATING APPARATUS. Arthur J. Kercher, Berkeley, Calif. Filed Jan. 5, 1927. Serial No. 159,035. 4 Claims. (Cl. 62—115.)

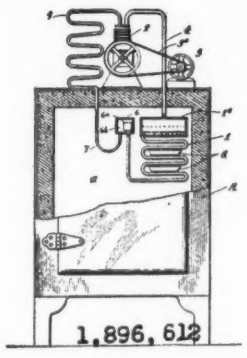
1. In a refrigerating system in which a refrigerant fluid is continuously circulated through a heat exchange device and a heat absorber, a compressor for circulating fluid through the heat exchange device and absorber, a receptacle within which is mounted the compressor and heat exchange device, upstanding cooling fins formed upon the outer surface of the receptacle, and a liquid within the receptacle to minimize transmission of sound from the compressor and to transfer heat from the compressor and heat exchange device to the receptacle.

1,896,529. LIQUID FOOD PRODUCT AND METHOD OF PACKAGING THE SAME. Donald K. Tressler, Gloucester, and Karl B. Norton, Manchester, Mass., assignors to Frosted Foods Co., Inc., Dover, Del., a Corporation of Delaware. Filed Sept. 6, 1930. Serial No. 480,196. 16 Claims. (Cl. 99—14.)

1. The method of preparing liquid or semi-liquid food products which consists in forming the fresh product into a frozen cake having exterior surface consisting entirely of the said product and then protecting it by completely enclosing the frozen cake in an aqueous glaze directly engaging the said surface.

1,896,612. REFRIGERATING APPARATUS. Ransom W. Davenport, Detroit, Mich., assignor to Chicago Pneumatic Tool Co., New York, N. Y., a Corporation of New Jersey. Filed Jan. 18, 1927. Serial No. 161,730. 12 Claims. (Cl. 62—115.)

1. In combination, a cabinet, and refrigerating apparatus of the closed cycle type operating on the Rankine cycle associated



with said cabinet, said apparatus being so constructed and arranged that all liquid refrigerant is moved into and stored within said cabinet during the shut down periods of said apparatus, and means restricting the area of contact between the liquid and vapor phases of the refrigerant.

1,896,673. SAFETY CUT-OFF VALVE FOR REFRIGERATOR CARS. Julius Kopsa, Chicago, and Edmund D. Brigham, Jr., Highland Park, Ill., assignors to North

(Continued on Page 27, Column 3)

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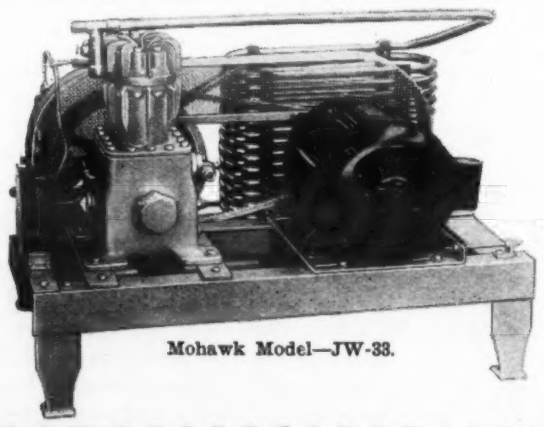

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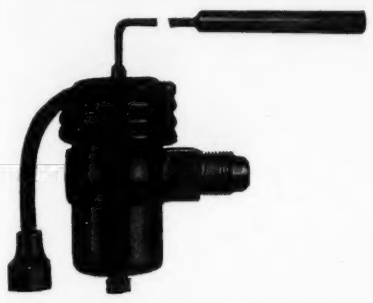

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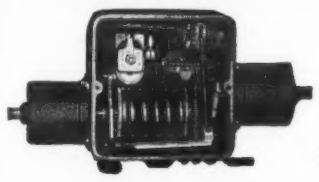

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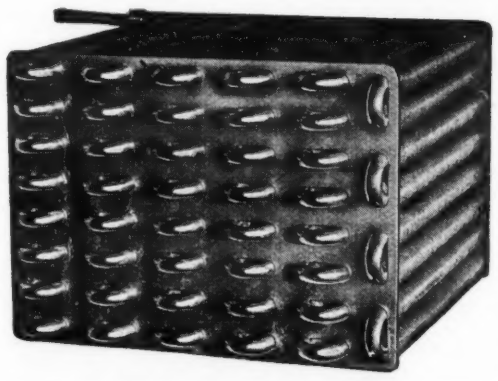

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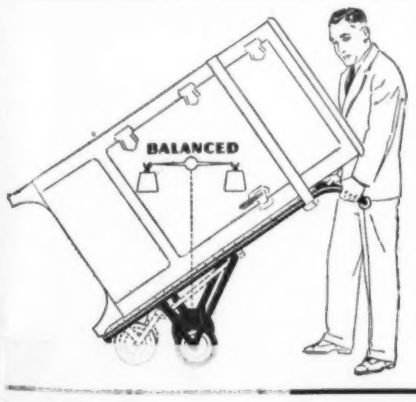

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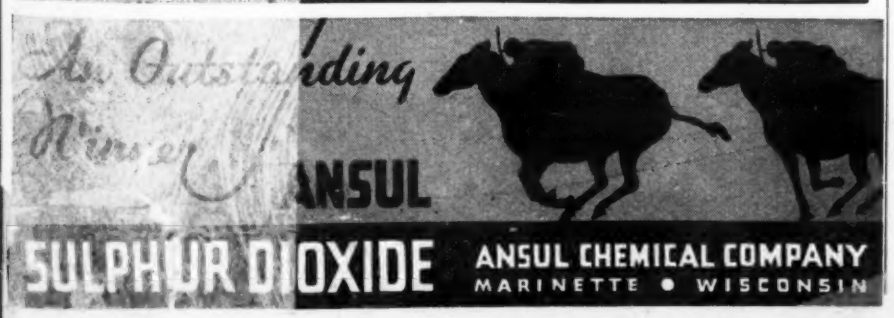


QUESTIONS

Authentic Statistics

No. 1083 (Financial Service, New York)—"In writing a report covering the electric refrigeration industry, we find conflicting figures as to sales in number, and dollar value, of domestic and commercial refrigerators sold each year since 1920. Kindly give us the correct figures, or if that is too much trouble, let me know where I can obtain them."

Answer—All available authentic statistics regarding sales of domestic and commercial refrigerators up to October, 1932, are published in the REFRIGERATION DIRECTORY and MARKET DATA BOOK. Monthly sales figures (totals only) from the Nema group of manufacturers are published regularly in ELECTRIC REFRIGERATION NEWS.

Sunbeam Compressors

No. 1084 (Manufacturer, Illinois)—"Please advise if the 'Sunbeam' compressor is manufactured by the Chicago Flexible Shaft Co. We notice that this company is indexed in the trade name section of the DIRECTORY, but it does not appear in the list of compressor manufacturers."

Answer — "Sunbeam" refrigeration compressors are manufactured by the Sunbeam Electric Mfg. Co., 225 Morgan Ave., Evansville, Ind. The Chicago Flexible Shaft Co. makes "Sunbeam" electric kitchen appliances.

Replacement Parts

No. 1085 (Distributor, California)—"As we are planning to open a general service department, can you advise us if any firm manufacturers a complete line of replacement parts for all makes of machines?"

Refrigerator Sales in Boston

No. 1086 (Merchandising Counselor, Boston)—"Have you any information on the number of electric refrigerators operating in the Metropolitan Boston district, and approximately the number sold and installed in 1932?"

Marshall Field's Lines

No. 1087 (Dealer, New Mexico)—"We are in the market for a reasonable-priced electric refrigerator, and note that Marshall Field & Co., Chicago department store, advertises a 4-ft. box for $79.50, a 4½-ft. model for $89.50, and a 5½-ft. model for $99.50. Please advise us what company makes these refrigerators."

Answer—According to our latest information, Marshall Field handles refrigerators made by the following manufacturers: Leonard Refrigerator Corp., 14260 Plymouth Road, Detroit, Mich.; Norge Corp., 670 E. Woodbridge, Detroit, Mich.; and U. S. Radio & Television Corp., Marion, Ind.

Germany Inquiry

No. 1088 (Germany)—"Please send us a price list of all American manufacturers of electric refrigerators."

Answer—See the specifications section of the REFRIGERATION DIRECTORY and MARKET DATA BOOK.

PATENTS

(*Continued from Page 26, Column 5*)

American Car Corp., Chicago, Ill., a Corporation of Illinois. Filed Nov. 6, 1930. Serial No. 493,899. 11 Claims. (Cl. 62—115.)

1. In combination with a refrigerating system for a railway car including a compressor mounted beneath the car body, and suction and pressure pipes leading from the compressor to the portions of the system within the car body, automatically closing valves in each of the pressure and suction pipes, and means for holding both valves open automatically by the pressure of the fluid in the pressure pipe.

1,896,693. REFRIGERATED DISPLAY DEVICE. Donald A. Battista, Philadelphia, Pa., assignor of one-half to William De Cou, Jr., Philadelphia, Pa. Filed July 7, 1932. Serial No. 621,262. 5 Claims. (Cl. 62—89.5.)

1. In a display counter of the character described having glass side walls, a pair of transparent shelves supported in spaced relation between the walls of the counter, said shelves being formed with a passageway extending therethrough, and means connecting the passageways of each shelf to form a continuous circuit for circulating a refrigerating medium through the passageways of the shelves.

1,896,756. APPARATUS FOR FORMING ICE CUBES. James E. Spalding, Collinsville, Ill. Filed July 30, 1930. Serial No. 471,644. 9 Claims. (Cl. 62—31.)

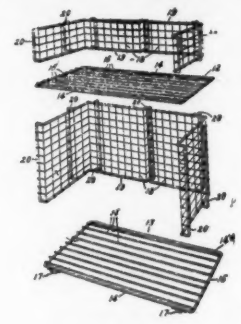
1. An ice-box having an ice sustaining floor comprising, a grid-work of intersecting plates, disposed for edgewise contact with a block of ice resting thereupon, and means disposed when in one position to present penetration of said plates into said block and when in another position to limit penetration of said plates into said block.

1,896,787. COOLING APPARATUS. John Anthony Prudente and Roy Thomas Iula. Ardmore, Pa. Filed April 25, 1931. Serial No. 532,892. 4 Claims. (Cl. 45—133.)

1. A refrigerator including a box having horizontally arranged reticulated partitions therein and having an air outlet opening adacent to the bottom thereof and an air inlet opening adjacent to the top thereof, a casing having an open top and an open front communicating with the last named opening, a water containing pan in the casing, a coil having a pipe connection with the bottom of the pan, and a return pipe which communicates with the top of the pan, an electrically driven fan in the casing, and a loosely woven fabric sheet affording a front for the casing and extending into the pan and having a back portion which is wound around the coil.

1,896,846. REFRIGERATOR CABINET SHELF. James L. Knight, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed Sept. 29, 1930. Serial No. 484,951. 1 Claims. (Cl. 311—153.

In combination, a plurality of shelves, means for supporting said shelves in a cabinet in spaced relation to each other, said means including vertically extending spacers formed of a network arranged



1,896,846

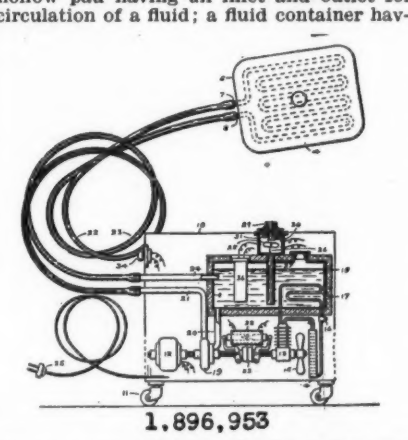
about the periphery of said shelves and their lower edges resting on the shelves above which they extend, said spacers having outwardly extending portions for maintaining said network in spaced relation with the inner walls of the cabinet, so as to prevent articles on the shelves from entirely covering the same and cutting off the circulation of air within the cabinet.

1,896,849. FREEZING TRAY. Delbert F. Newman, Schenectady, N. Y., assignor to General Electric Co., a Corporation of New York. Filed April 13, 1931. Serial No. 529,689. 2 Claims. (Cl. 62—108.5.)

1. A freezing tray comprising a frame having a plurality of openings therein, the portion of said frame about the openings therein being depressed below the upper surface thereof, and a plurality of cups in the openings in said frame below the upper surface thereof, said frame having longitudinal portions on opposite sides of said cups formed to retain them in said frame.

1,896,953. ELECTRIC ICE CAP. Cecil Starke Hassell, Miami, Fla. Filed May 18, 1931. Serial No. 538,383. 3 Claims. (Cl. 62—141.)

1. A thermal applicator, comprising a hollow pad having an inlet and outlet for circulation of a fluid; a fluid container having an outlet and inlet; flexible tubes connecting the container outlet and inlet with the pad inlet and outlet; a pump for circulating fluid through the circuit so provided; a constantly driven motor for driving the pump; a mechanical refrigerator for cooling such fluid in the container; a magnetic clutch adapted to connect the refrigerator to the motor; and a thermostat exposed to the circulating fluid, controlling the electric circuit through the magnetic clutch.



1,896,953

1,897,020. REFRIGERATION UNIT. Frederick Carl Geiler, Dayton, Ohio, assignor to Trupar Mfg. Co., Dayton, Ohio, a Corporation of Ohio. Filed July 18, 1927. Serial No. 205,535. 15 Claims. (Cl. 62—95.)

1. A refrigerator unit comprising a reservoir, and a plurality of dependent loop like conduits of substantially triangular cross-sectional contour, the ends of which communicate with the reservoir, said loops being arranged with their apices turned outward and their flat faces inturned and aligned with like faces of adjacent conduits.

TRADEMARKS

Ser. No. 333,579. Electrolux Servel Corp., New York, N. Y. Filed Jan. 3, 1933.

BROOKLYNITE

For Household and Store Refrigerators and Parts Thereof and Refrigerating Systems Used for the Preservation of Foodstuffs or Other Matter.

Claims use since January, 1930.

Ser. No. 333,580. Electrolux Servel Corp., New York, N. Y. Filed Jan. 3, 1933.

KITCHENETTE

For Household and Store Refrigerators and Parts Thereof, and Refrigerating Systems Used for the Preservation of Foodstuffs or Other Matter.

Claims use since January, 1932.

Ser. No. 333,581. Electrolux Servel Corp., New York, N. Y. Filed Jan. 3, 1933.

CHICAGOAN

For Household and Store Refrigerators and Parts Thereof, and Refrigerating Systems Used for the Preservation of Foodstuffs.

Claims use since January, 1928.

Ser. No. 333,582. Electrolux Servel Corp., New York, N. Y. Filed Jan. 3, 1933.

NEW YORKER

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